MINISTRY OF
COMMMUNICATIONS AND DIGITAL

CyberSecurity
MALAYSIA

SMART CITIES IN DARKNET ERA

"SMART CITIES, DARKNET RESILIENCE REQUIRED "

Nurshahira Binti Mohd,
Cyber Risk Intelligence Department

SECURING
OUR
CYBERSPACE

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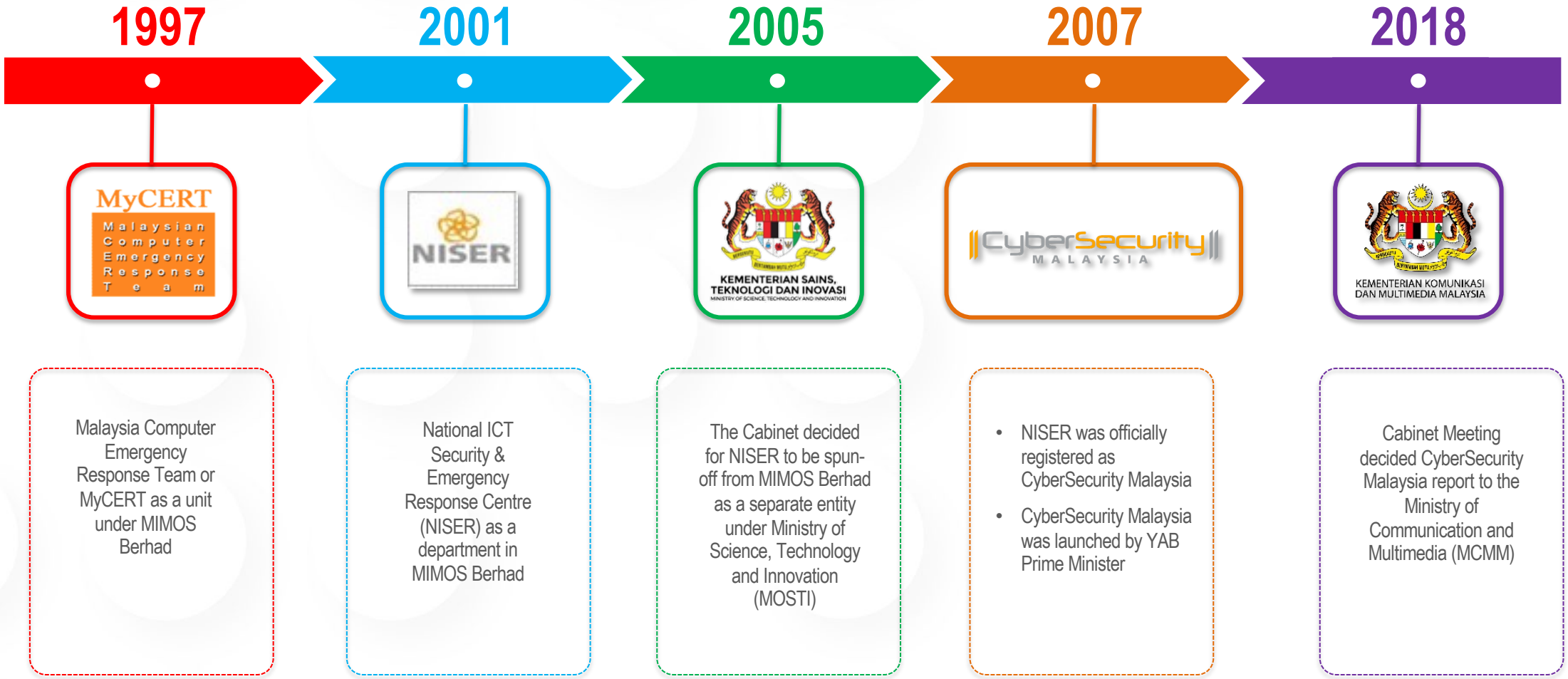
History Timelines



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Visi dan Misi CyberSecurity Malaysia

VISION

World-class cyber security specialist agency

MISSION

Leading the development of a safer and more resilient cyber ecosystem to enhance national security, economic prosperity and social harmony through

- Provision of quality and impactful services
- Frontier-expanding cyber knowledge and technical supremacy
- Continuous nurturing of talent and expertise

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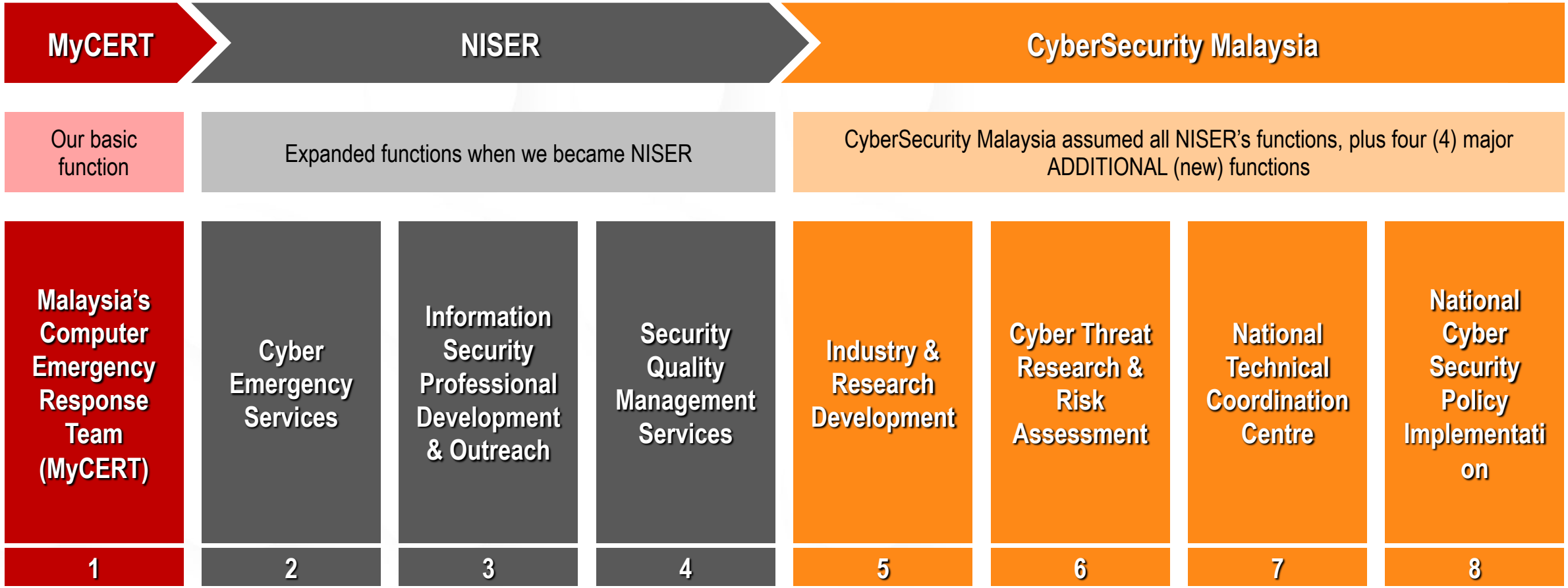
Our Functions



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Cyber Risk Intelligence - Services

DARKWEB OPERATIONAL INTELLIGENCE

ATTACK SURFACE MANAGEMENT

NETWORK DEFENCE MONITORINNG

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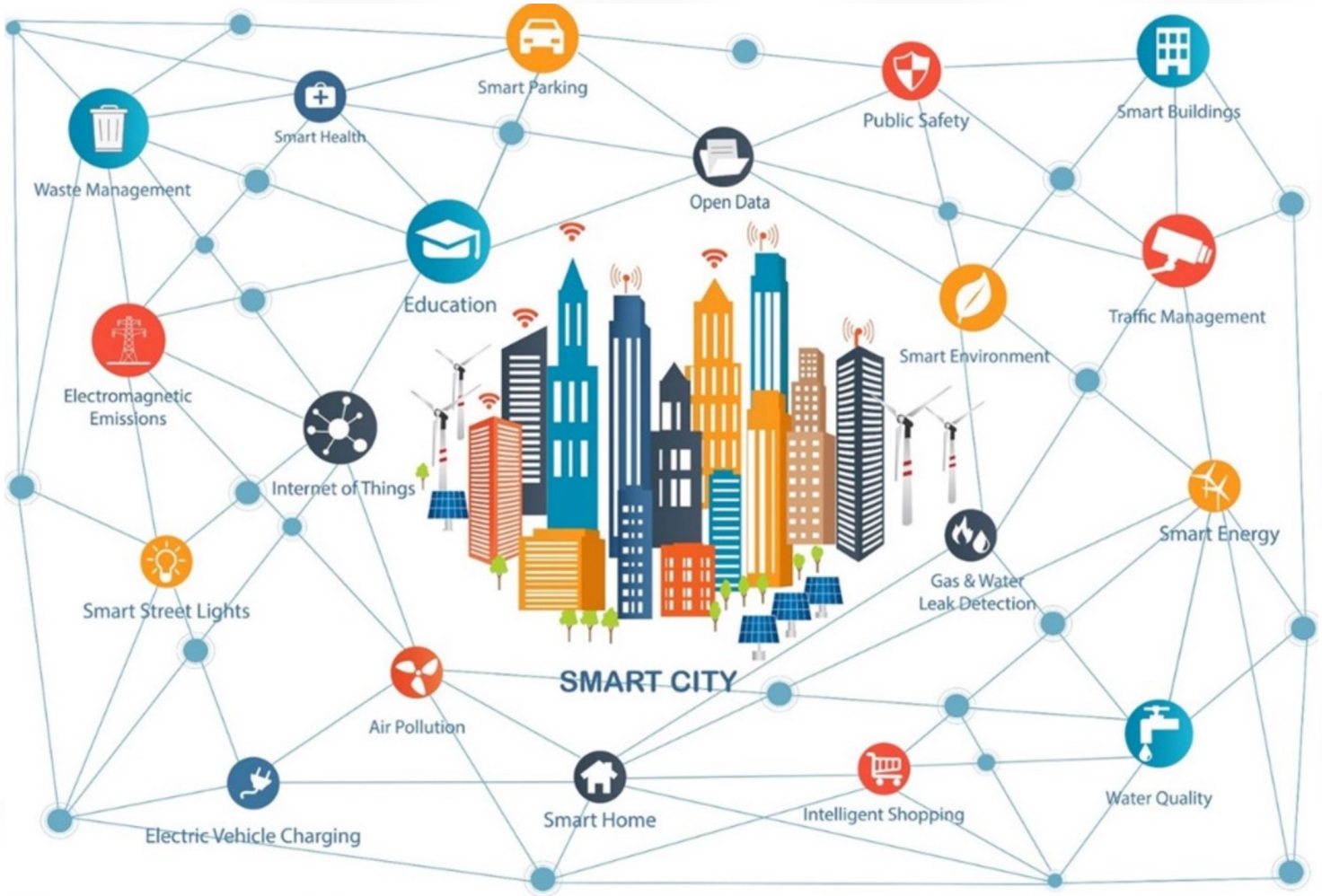
SMART CITIES IN CYBERSECURITY



A smart city is an urban environment that leverages technology to enhance the efficiency of various systems and improve the quality of life for its inhabitants. Through interconnected devices, data collection, and analysis, a smart city optimizes services like transportation, energy, healthcare, and security, fostering a more sustainable and responsive urban ecosystem.

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SMART CITY & THREATS & DARKWEB

SMART CITY

Smart cities, with their interconnected systems and reliance on data, bring about numerous advantages but also introduce risks, particularly in the realm of data security:

- **Data Breaches**
- **Cyberattacks on Infrastructure**
- **IoT Device Vulnerabilities**
- **Human Error**
- **Social Engineering Attacks**

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SMART CITY & THREATS & DARKWEB

THREAT

System Vulnerability

Malware

Hacker/APT/Hacktivist

Human Error

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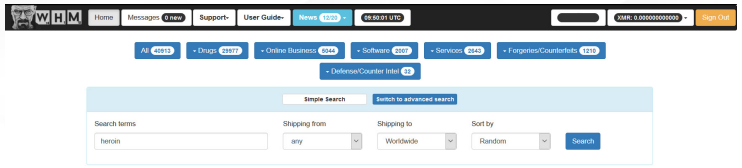
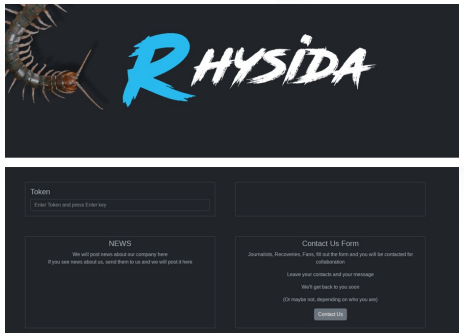
SMART CITY & THREATS & DARKWEB



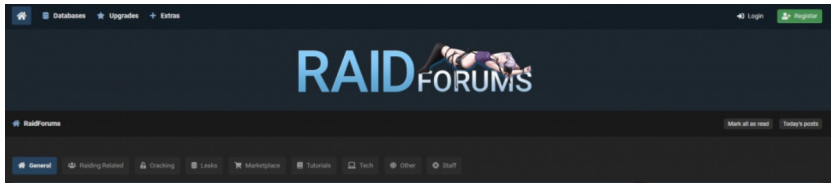
FINANCING AND FRAUD

DARKNET MARKET

Darkweb



RANSOMWARE



HACKING FORUM

BITCOIN SERVICE

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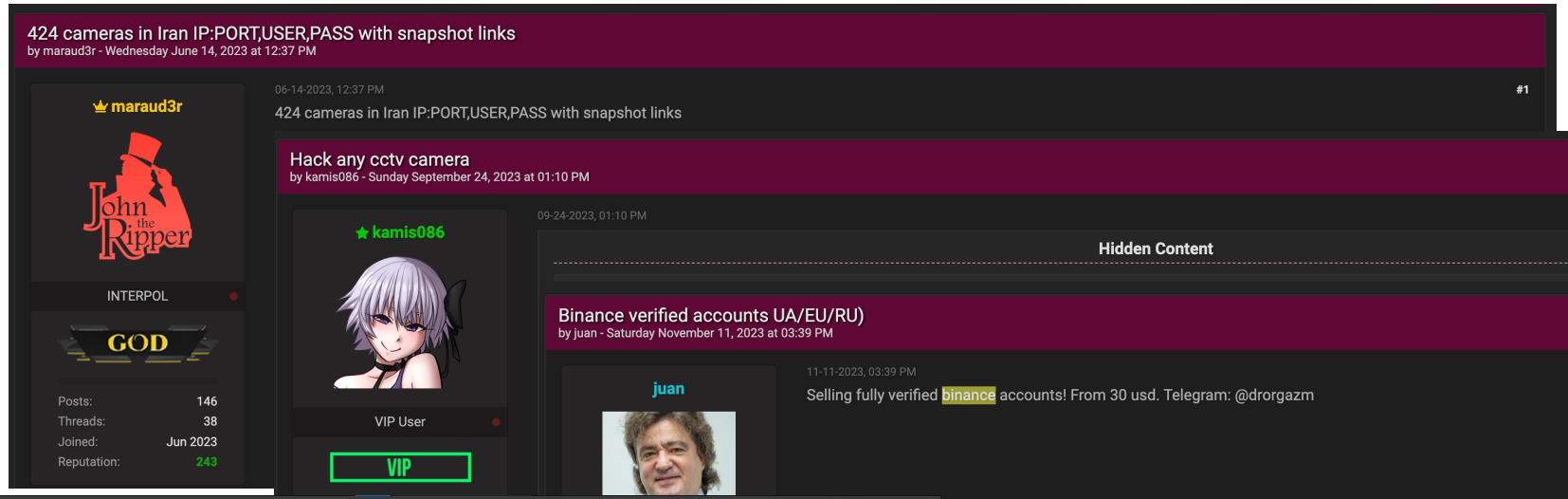
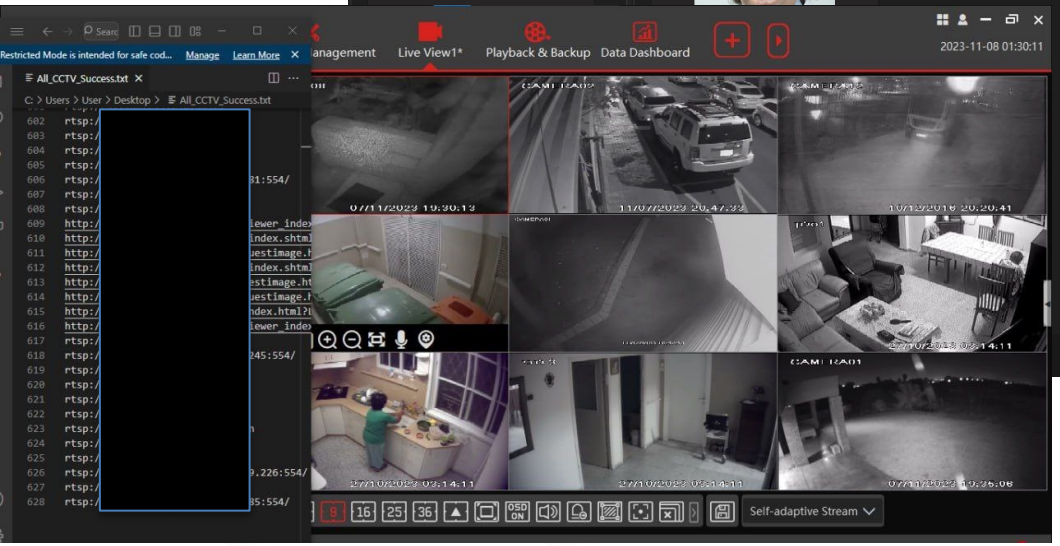
SMART CITY & THREATS & DARKWEB





Florida bar America state cctv hacked by Ganosecteam

http[redacted]

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SMART CITY & THREATS & DARKWEB

THREATS

SMART CITY

DARKWEB

Darknet as a Destination for Stolen Smart City Data
Potential Risks Arising from Data on Darknet
Securing Smart City Data

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Who owns the personal data of Malaysians?

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PERSONAL DATA PROTECTION ACT 2010 (PDPA) OF ACT 709.

JABATAN PERLINDUNGAN DATA PERIBADI

Kementerian Komunikasi dan Multimedia Malaysia

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PRINCIPAL PARTY UNDER ACT 709

DATA USERS

Individuals or companies that process personal data in commercial transactions

DATA PROCESSOR

Individuals or companies that process personal data on behalf of data users

DATA SUBJECT

Owner of personal data Ex:Employees or Customers

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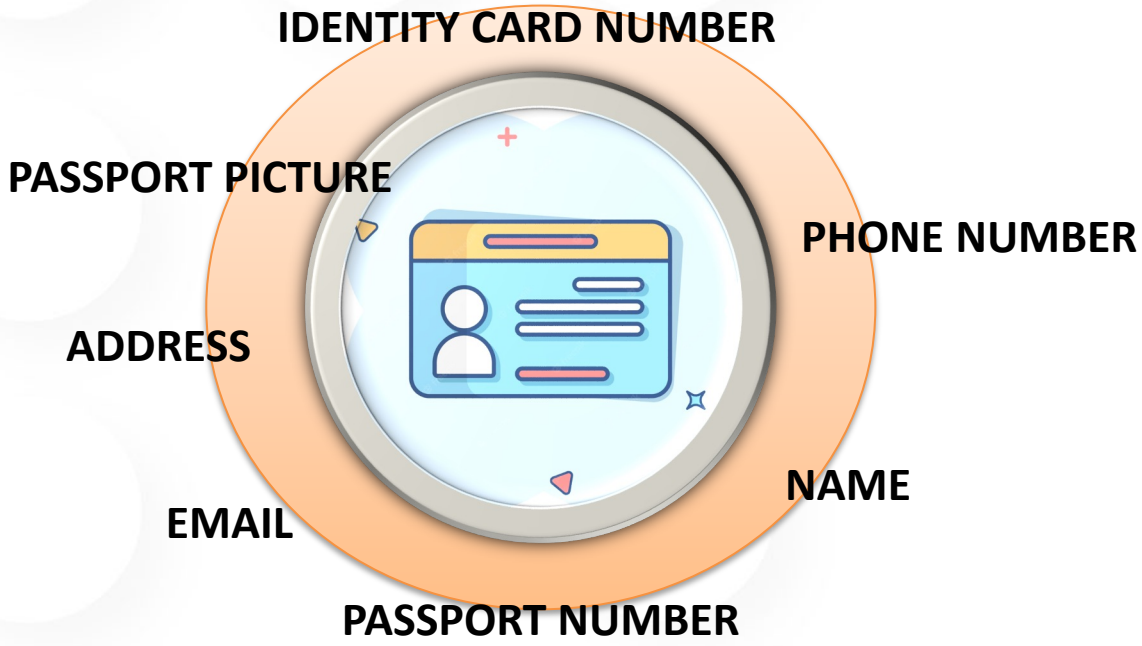
PERSONAL IDENTIFIABLE INFORMATION



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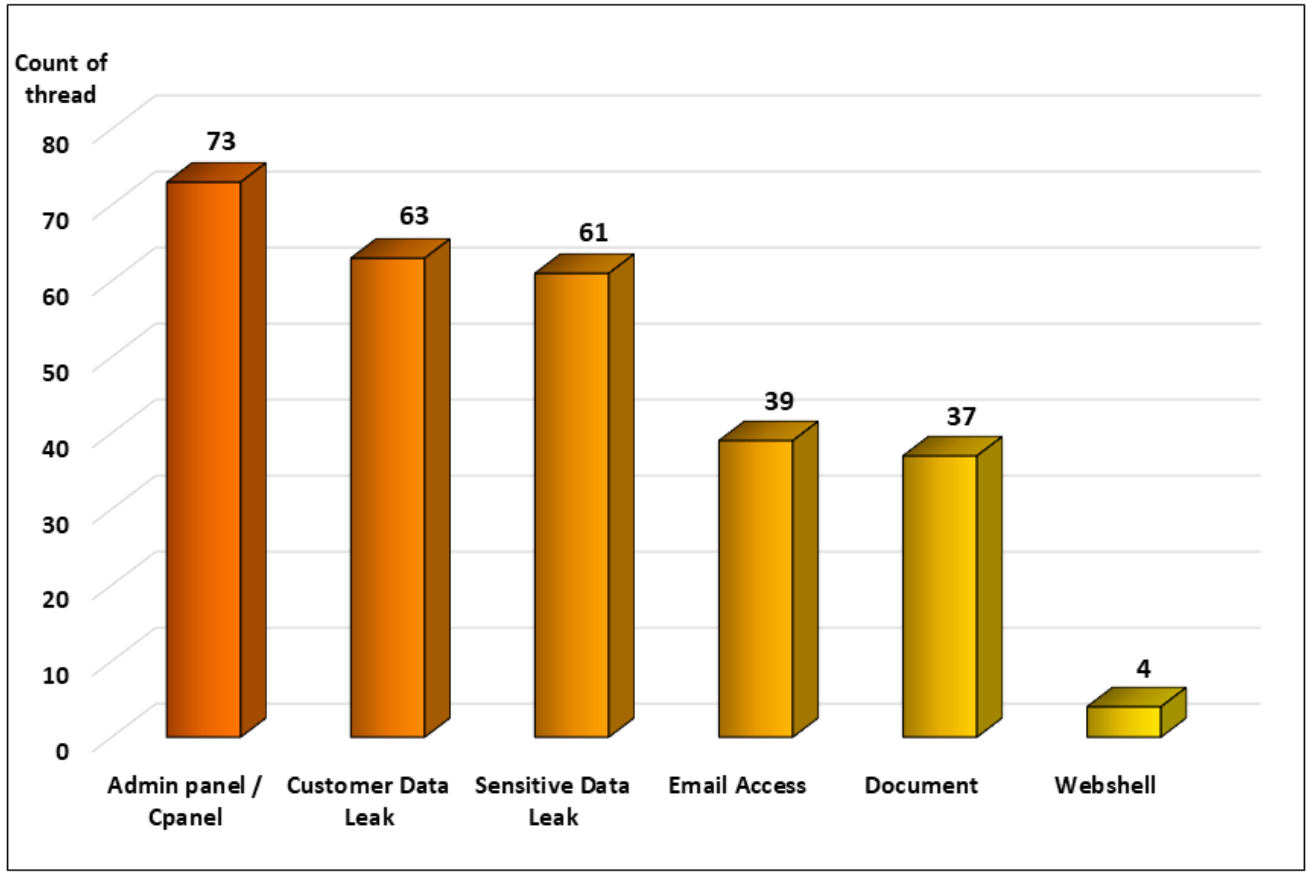
STATISTIC TYPE OF DATA LEAKAGE



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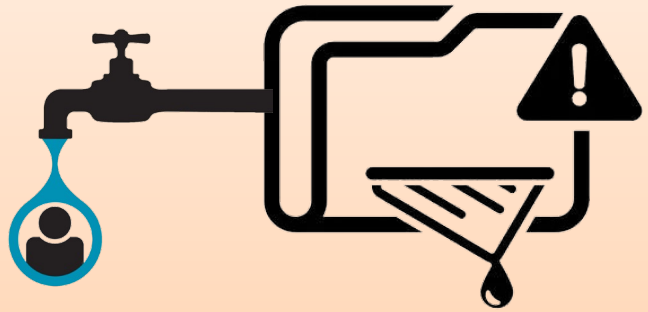
DATA BREACH VS DATA LEAK

DATA BREACH

A data breach occurs as a result of a security incident or when cybercriminals bypass security controls or launch a successful attack on systems.

VS



DATA LEAKAGE

Data leaks happen due to missing controls and protection.

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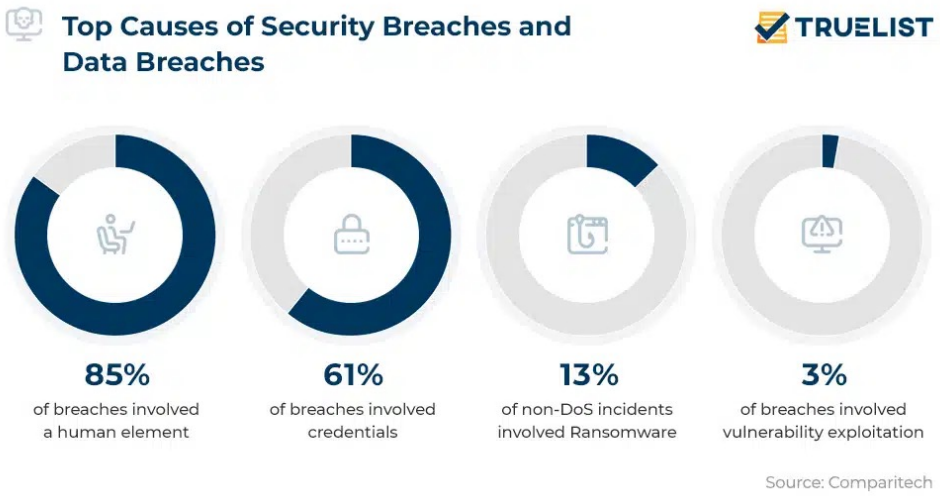
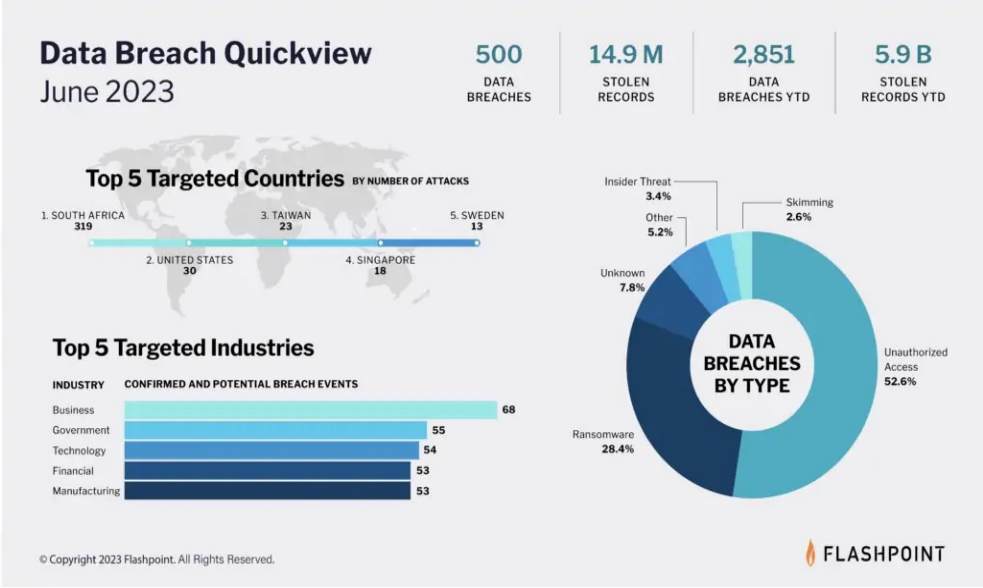
CAUSES OF DATA LEAK & BREACH





1. Insider Threat
2. Phishing Attacks
3. Malware And Ransomware
4. Weak Authentication And Authorization
5. Insecure Data Storage
6. Third-party Vulnerabilities
7. Social Engineering
8. Human Error

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CAUSES OF DATA LEAK

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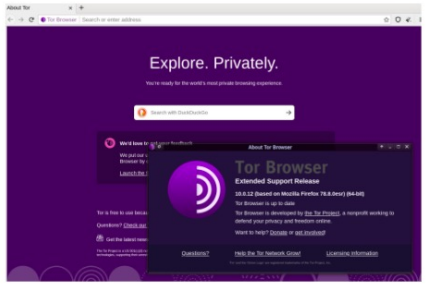
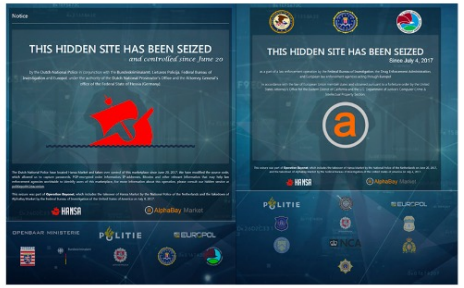
HISTORY OF DARK-WEB





1980s-1990s

ORIGINS OF ANONYMITY

2002

TOR NETWORK LAUNCH

2017

DARKNET MARKET TAKEDOWNS

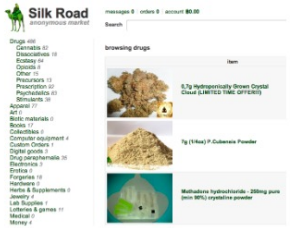
1990s

THE ONION ROUTING PROJECT

TorProject.org

2011

SILK ROAD



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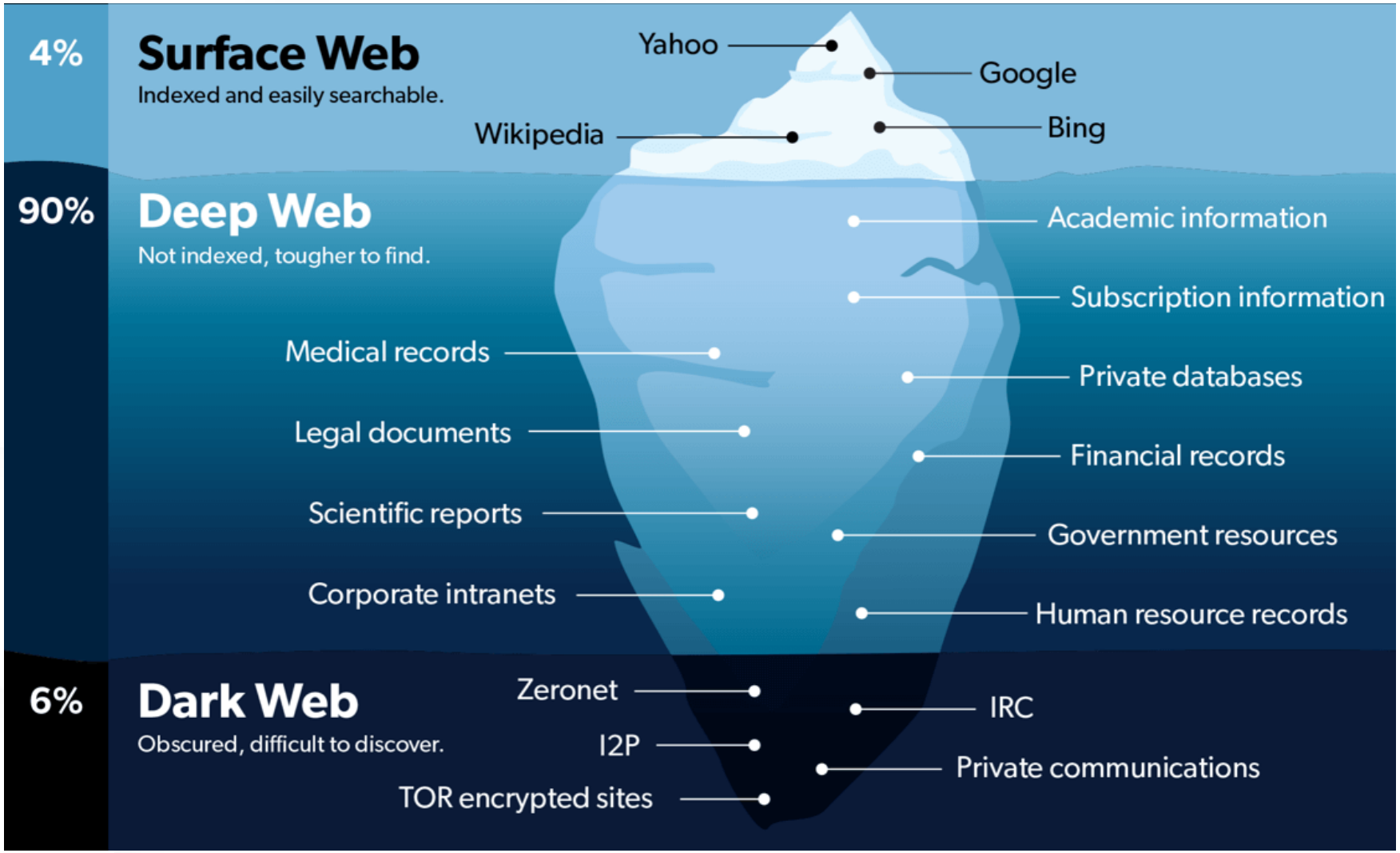
WHAT IS DARK-WEB



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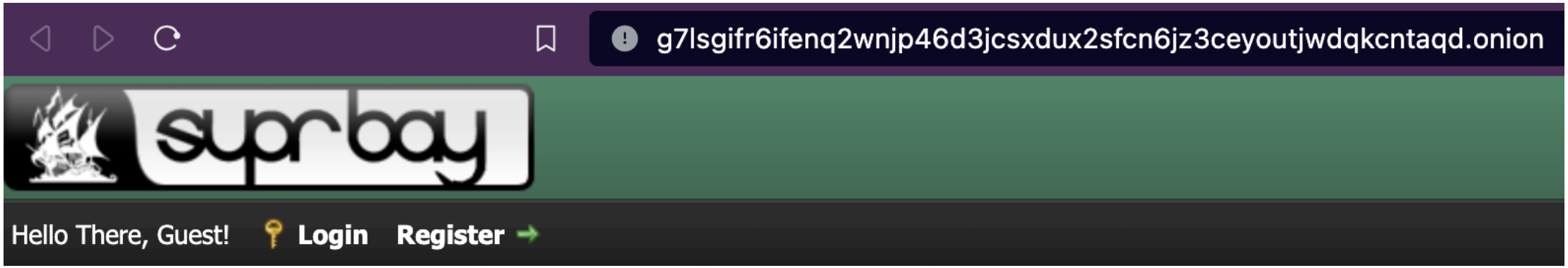
WHAT IS DARK-WEB



DARKWEB URL CHARACTERISTIC:

1. Some of them are very long
2. Random combinations of letters and numbers
3. Ended with .onion top-level domain names.

http://dreadytofatroptsdj6io7l3xptbet6onoyno2yv7jicoxknyazubrad.onion

http://pqqmr3p3tppwqvvapi6fa7jowrehgd36c56lzr26qqormaqvh6gt4jyd.onion

http://hydraclubbioknikokex7njhwuahc2l57lfiz7z36md2jvopda7nchid.onion

http://tmglsdds6usxqsghympkjfbddume3olbvpqdrpxvcxplhd4z7bxucdid.onion

http://mlyusr6htlxsyc7t2f5z53wdxh3win7q3qpxcrbam6jf3dmua7tnzuyd.onion

http://asap2u4pvplnkzl7ecle45wajojnftja44wvovl3jrvhangeyq67ziid.onion

http://darkzzx4avcsuofgfez5zq75cqc4mprjvfqywo45dfcaxrwqg6qrlfid.onion

http://rrlm2f22lpqgfhyydqkxxzv6snw55qvc2krjt2q557l7z4te7fsvhbid.onion

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ACTIVITY IN DARK-WEB

RANSOMWARE

FINANCING AND FRAUD

DARKNET MARKET

HACKING FORUM

ILLEGAL PORNOGRAPHY

SOCIAL MEDIA

BITCOIN SERVICE

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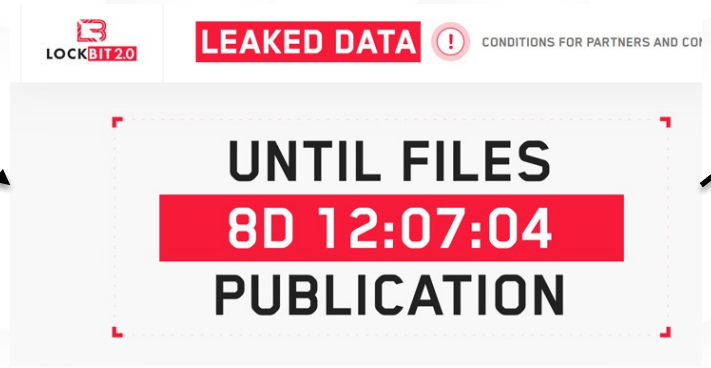
RANSOMWARE

RANSOMWARE

METHOD



MOTIVATION

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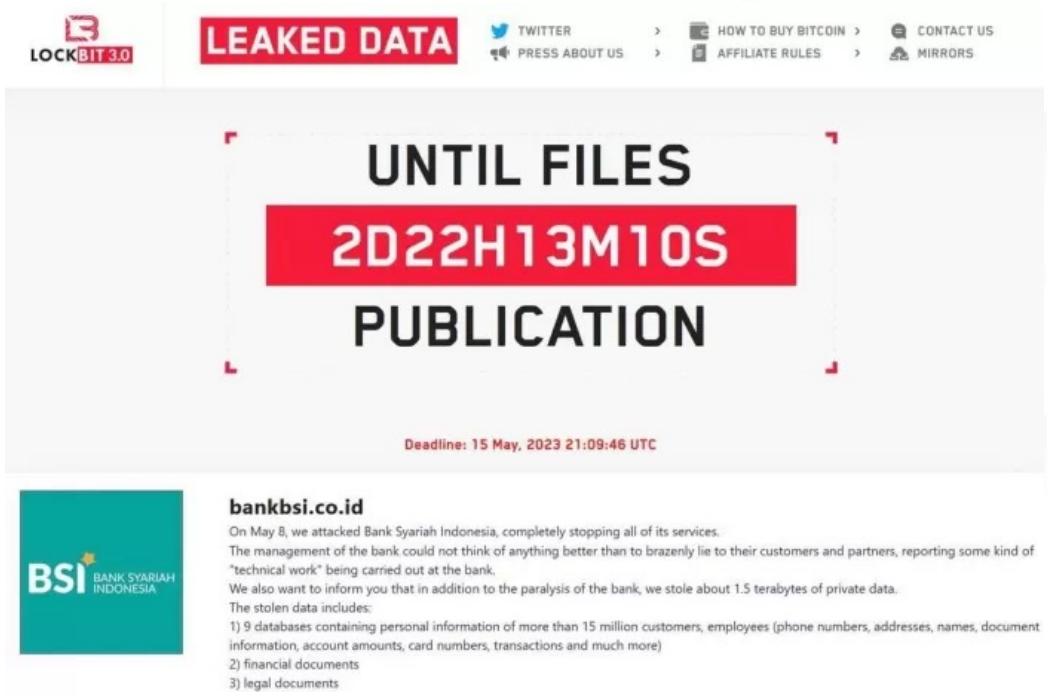
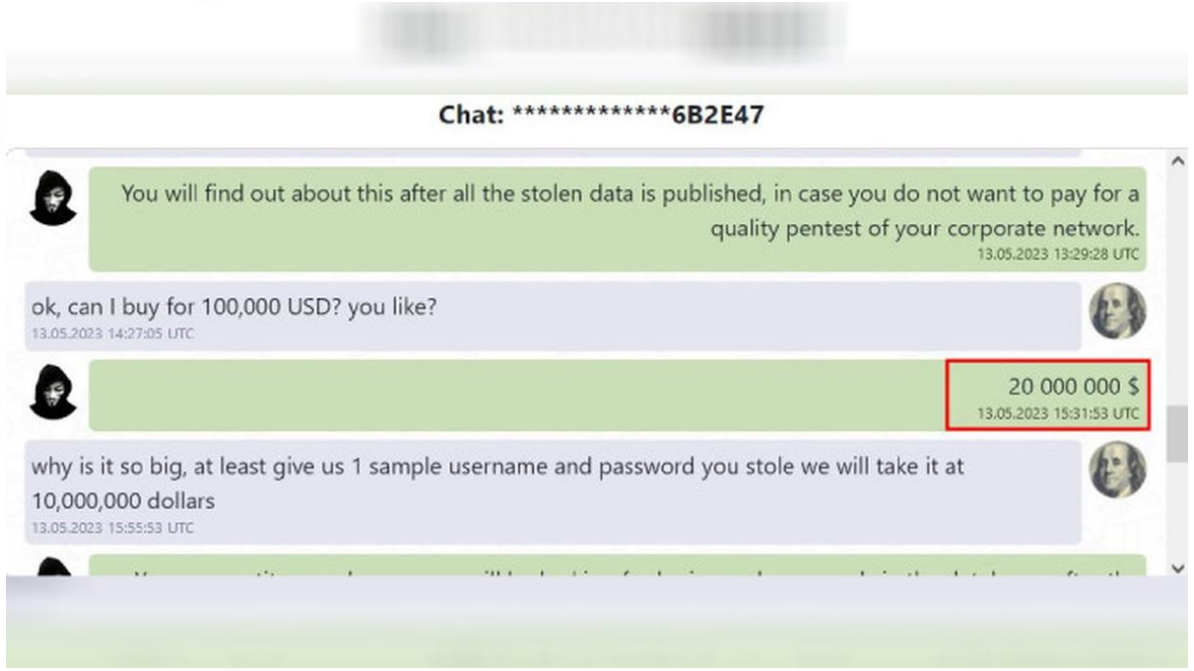
RANSOMWARE INCIDENT





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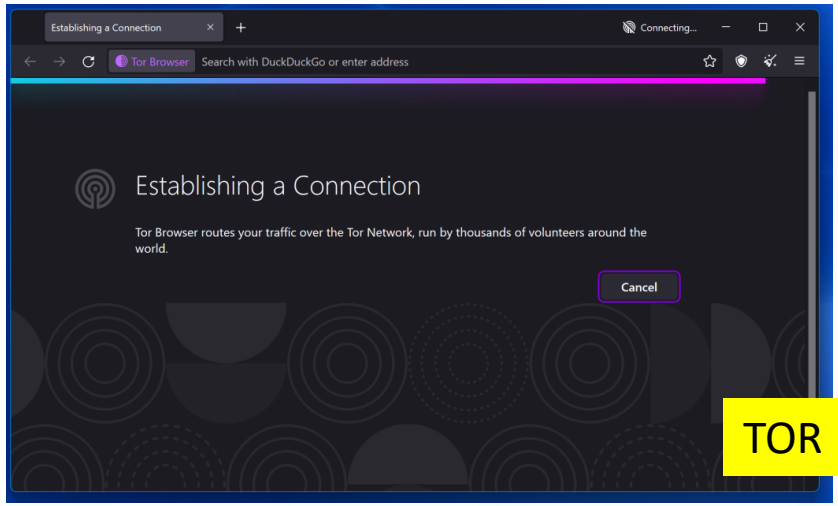
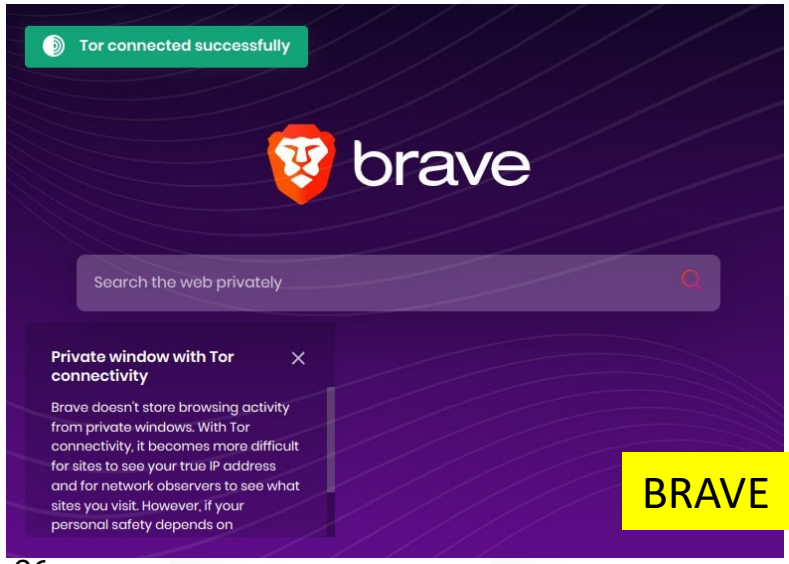
ACCESS DARKWEB

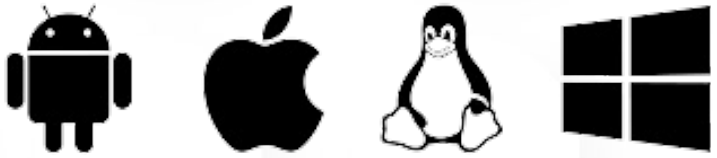


TOR



BRAVE

WHERE IS THE RISK



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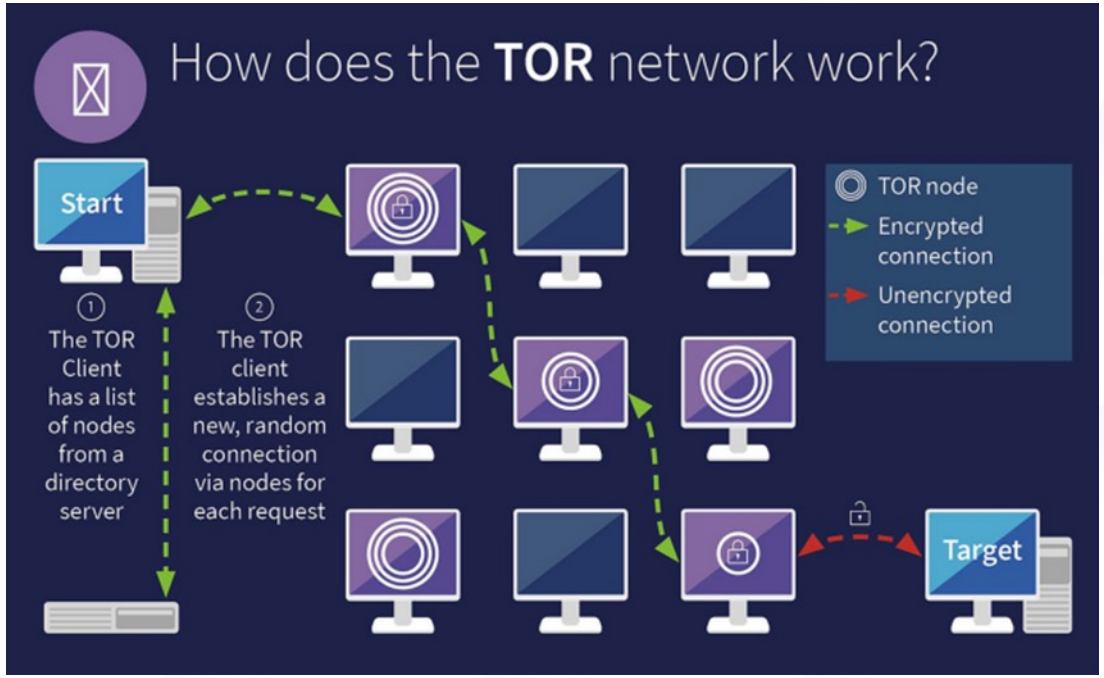
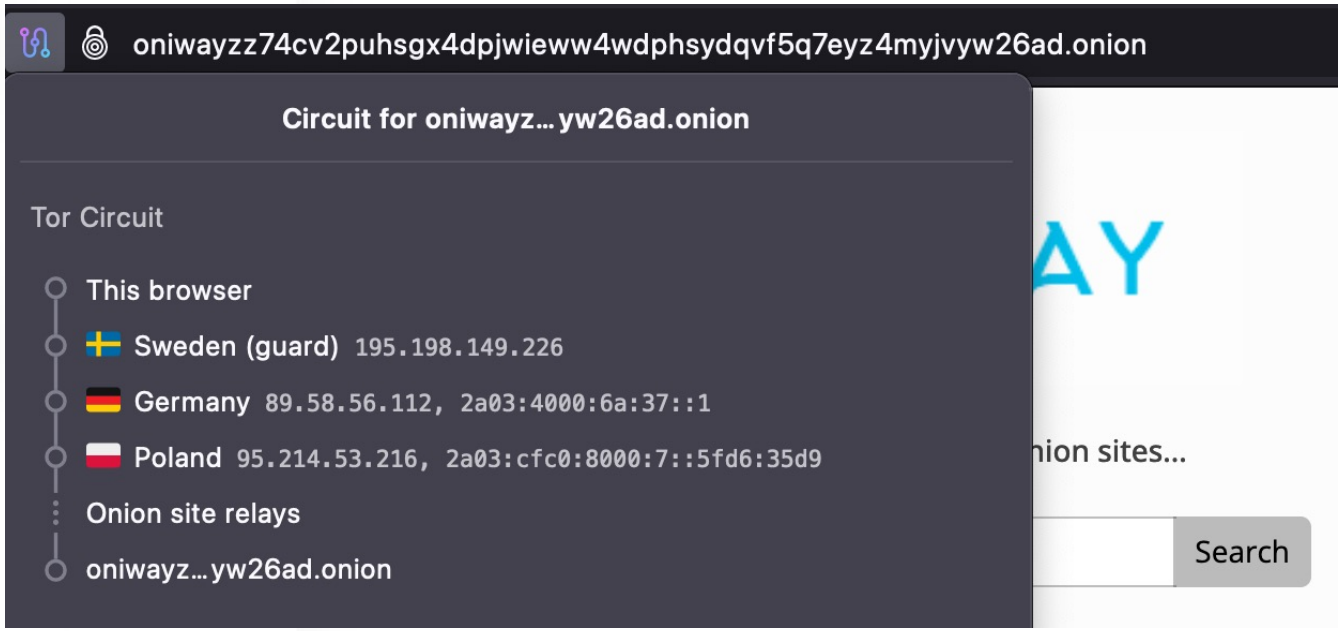
Tor Network





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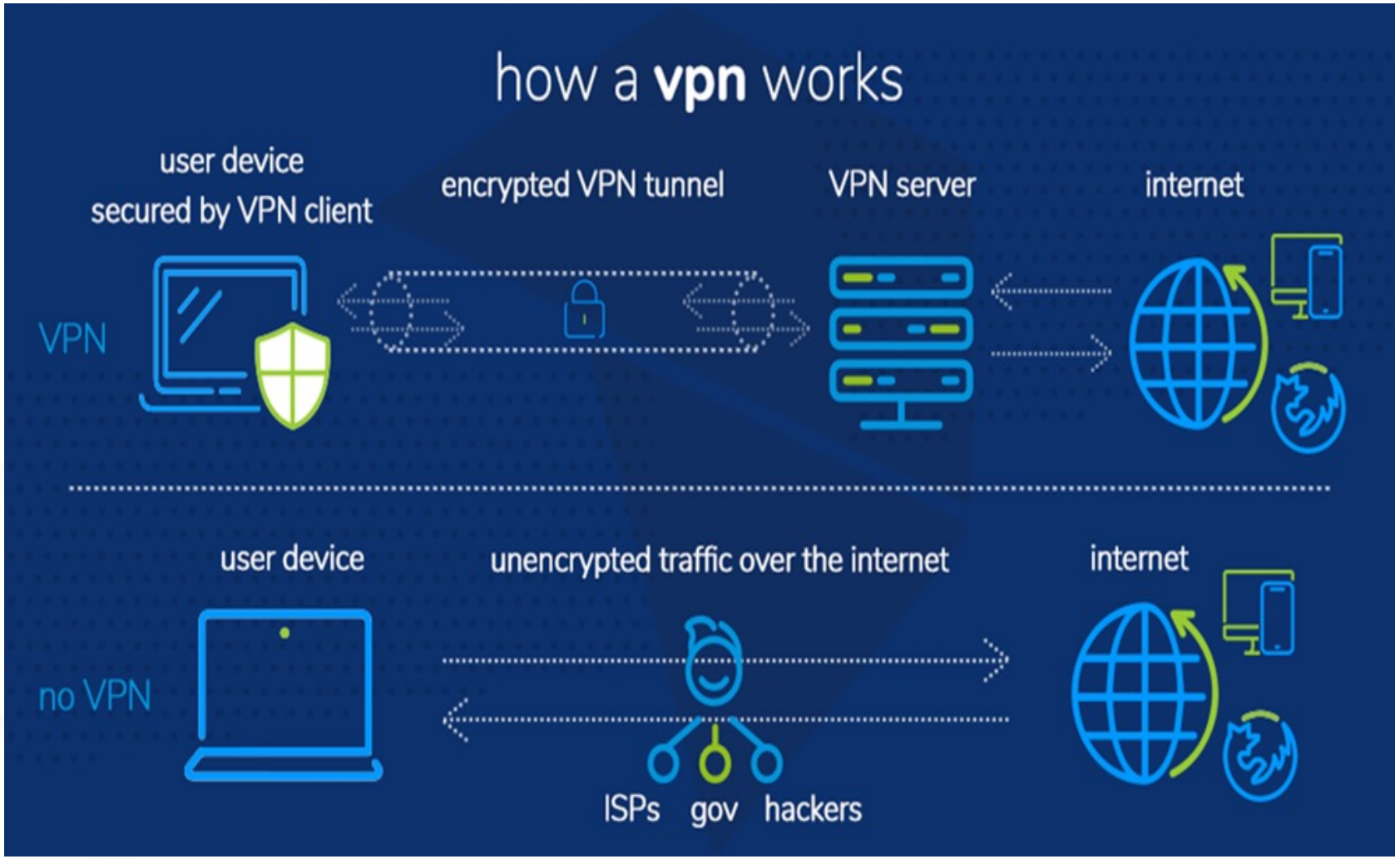
Tor Network



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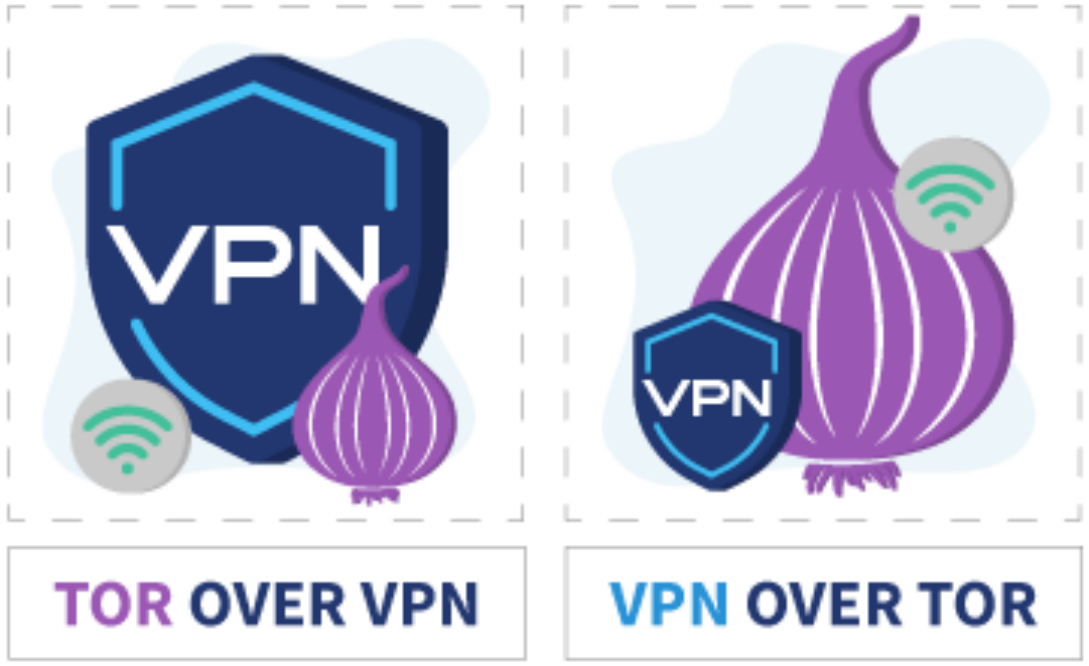
BEING ANONYMOUS

- ✓ Tails os
- ✓ Tor Browser
- ✓ Hotspot WiFi
- ✓ VPN
- ✓ Proxy
- ✓ OpenPGP
- ✓ Bitcoin
- ✓ Non-Personal Laptop
- ✓ Never shared information



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DARKWEB TOUR

DARKWEB URL

SOCIAL MEDIA
- Reddit - https://www.reddittorjg6rue252oqsxryoxengawnmo46qy4kyii5wtqnwfj4ooad.onion
- Facebook - https://www.facebookwkhpilnemxj7asaniu7vnjjbiltxjqhye3mhbshg7kx5tfyd.onion

EMAIL
- Mail2Tor - http://mail2torjgmxgexntbrmhvgluavhj7ouul5yar6ylbvjkxwqf6ixkwyd.onion
- Onion Mail - http://pflujznptk5lmuf6xwadfqy6nffykdvahfbljh7liljailjbxrgvhfid.onion

NEWS
- Tor Times - http://tortimeswqlzti2aqbjoieisne4ubyuoeiiugel2layyudcfrwln76qd.onion

SEARCH ENGINE
- Haystak - http://haystak5njsmn2hqkewecpaxetahtwhsbsa64jom2k22z5afxhnpxfid.onion

USE AT YOUR OWN RISK

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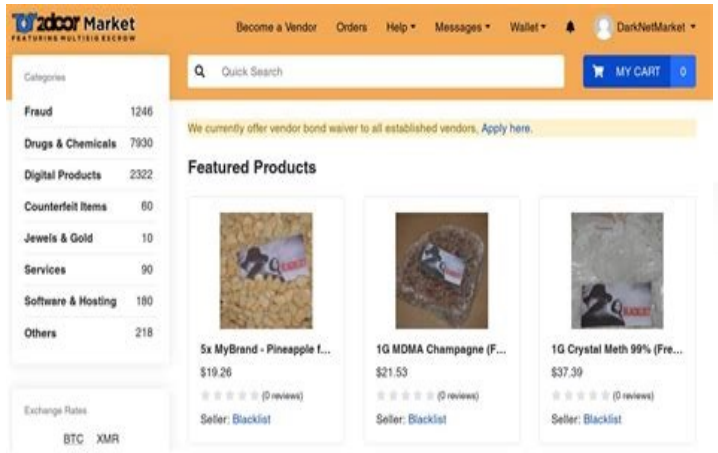
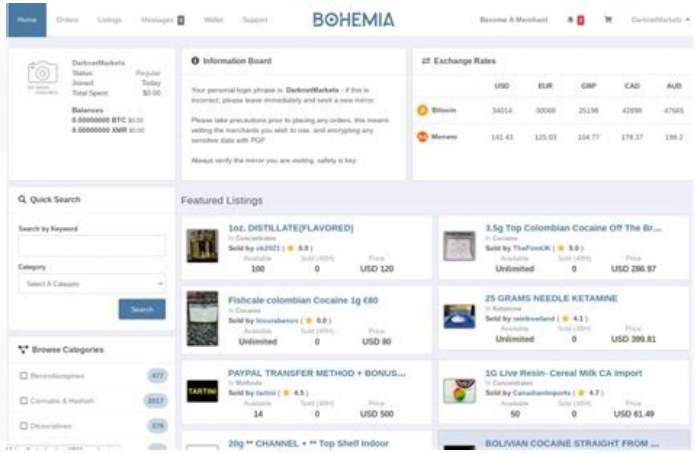
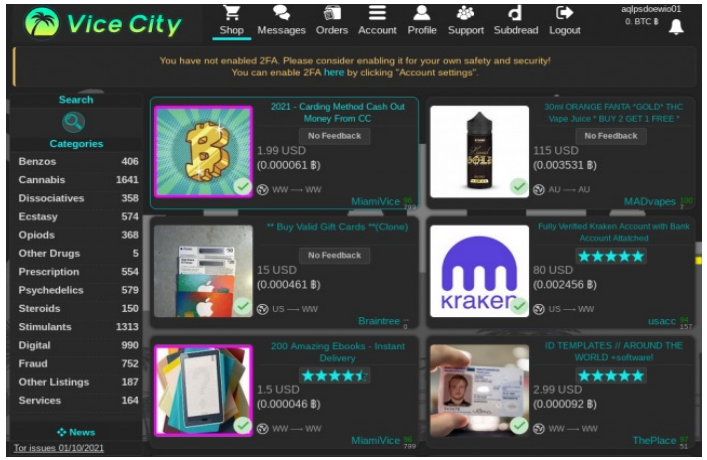
UNDERGROUND FORUM/MARKET

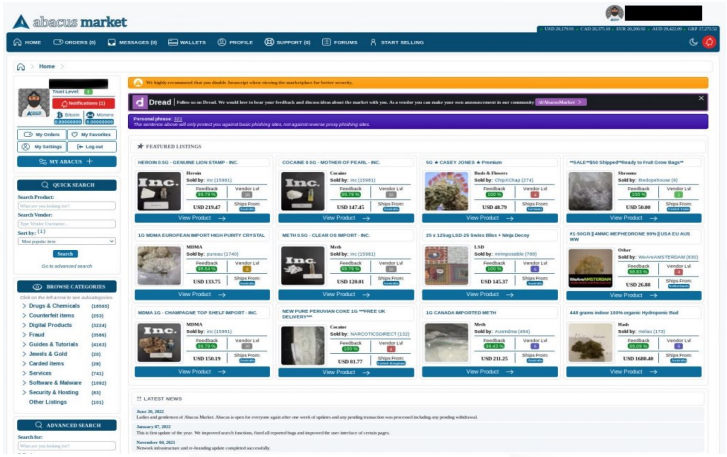
BF

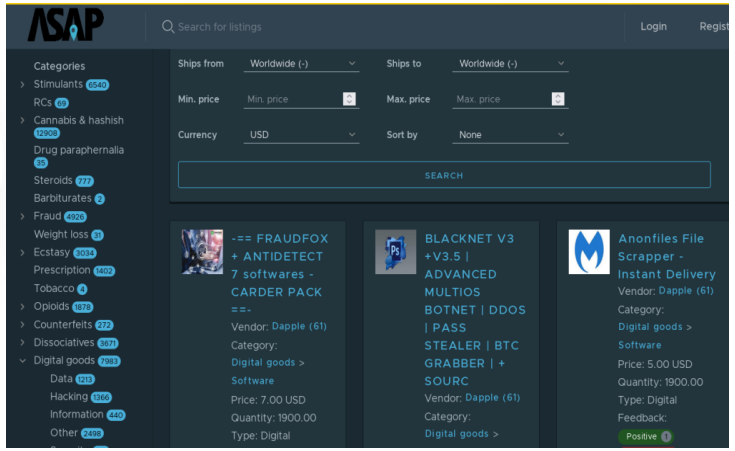
UNDERGROUND FORUM/MARKET

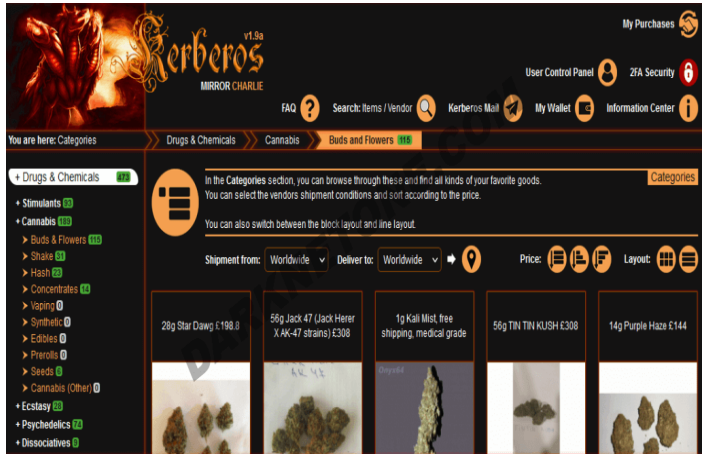












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COMMUNICATION IN DARKWEB

TOX

Telegram

Discord

Proton Mail

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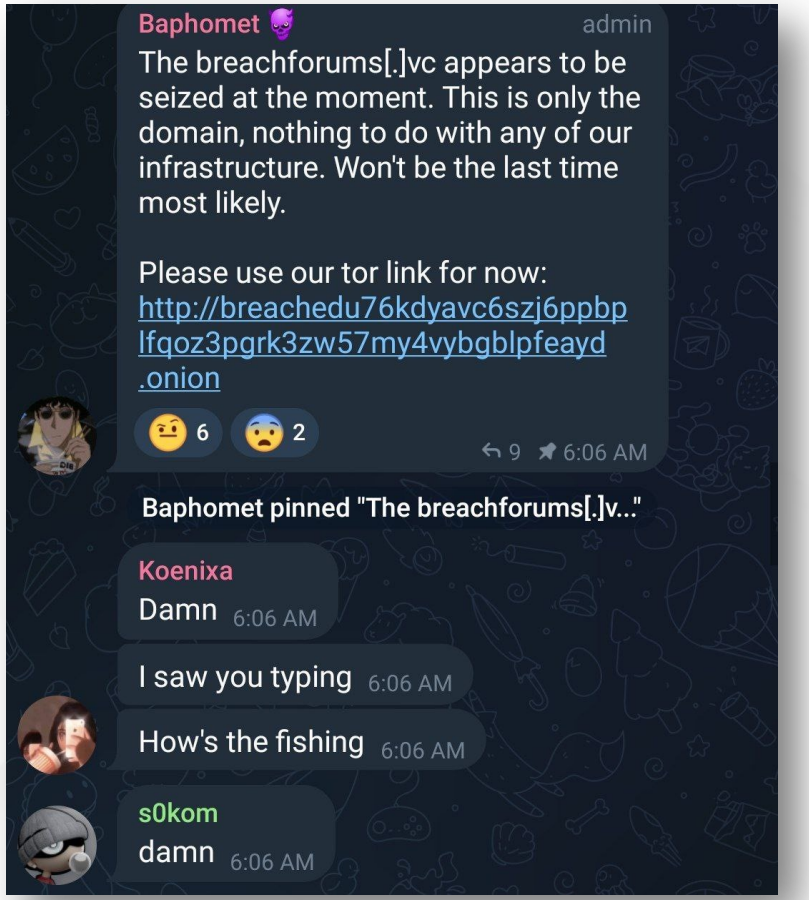
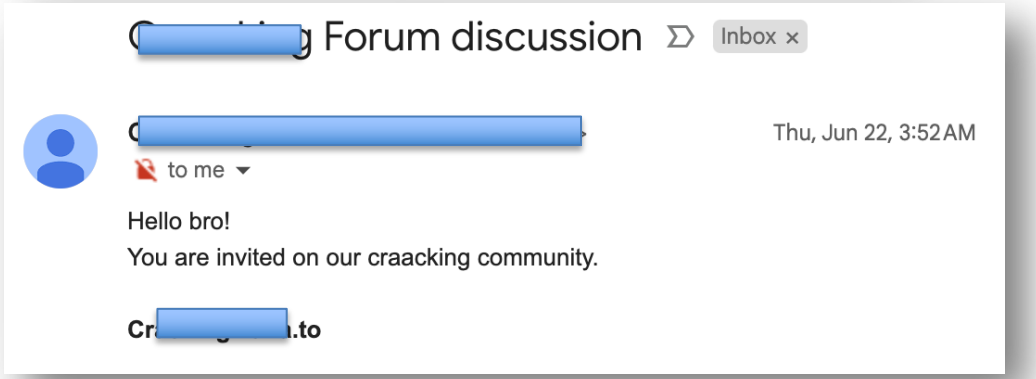
COMMUNICATION IN DARKWEB





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UNDERGROUND FORUM/MARKET

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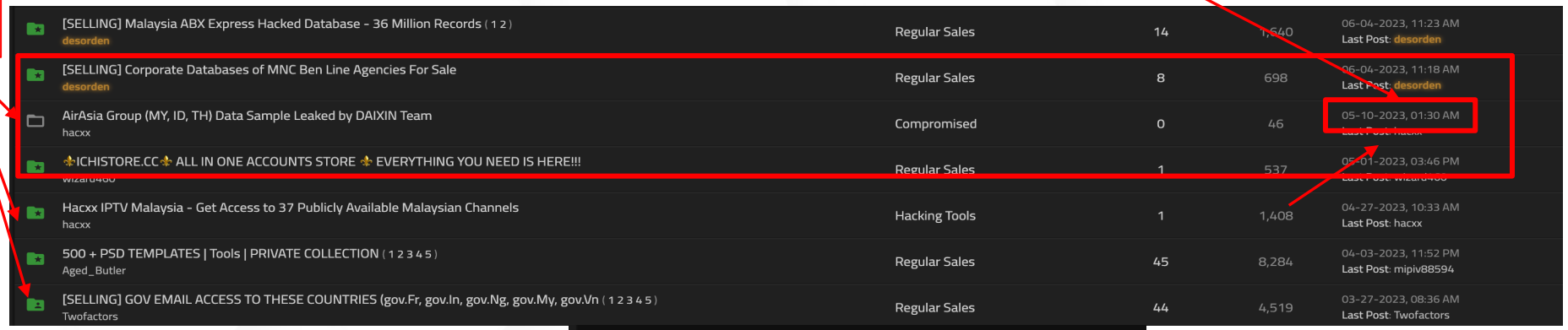
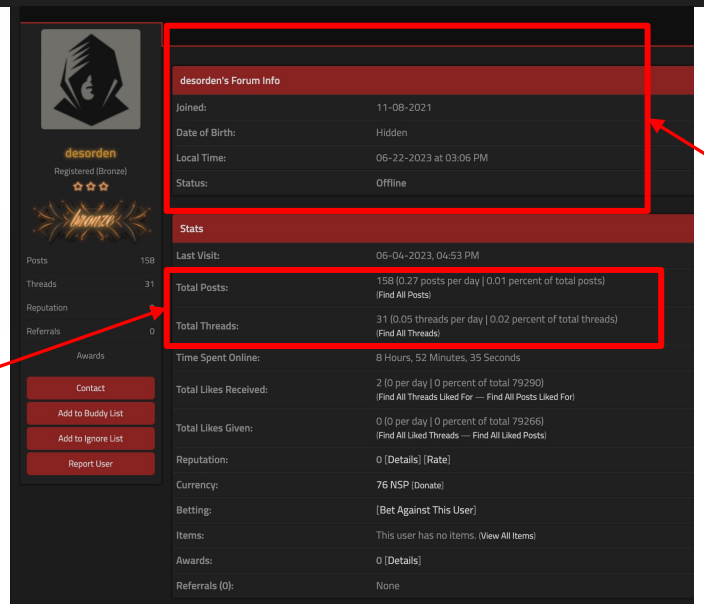
CASE STUDY – SITE OVERVIEW (FORUM)

Threads in Subforum

Date + Time





Post Content

User Information
(Joined date, # of posts, etc.)

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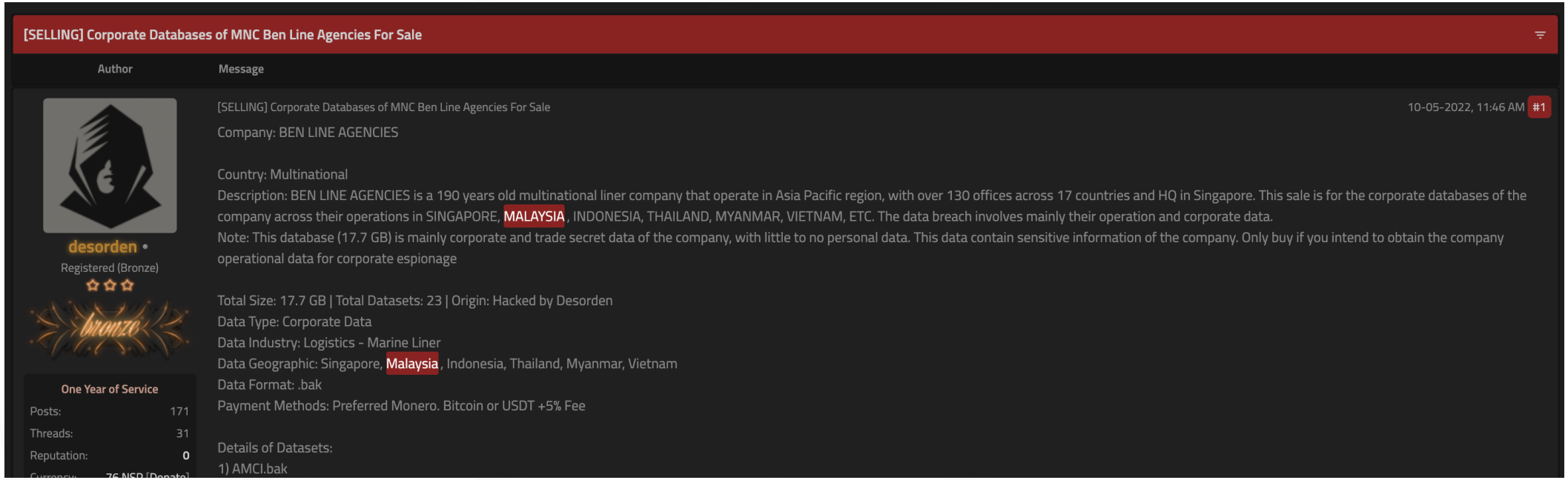
CASE STUDY – INCIDENT OVERVIEW



[SELLING] Corporate Databases of MNC Ben Line Agencies For Sale

Author	Message

desorden •
Registered (Bronze)

One Year of Service
Posts: 171
Threads: 31
Reputation: 0

[SELLING] Corporate Databases of MNC Ben Line Agencies For Sale — 10-05-2022, 11:46 AM #1

Company: BEN LINE AGENCIES

Country: Multinational
Description: BEN LINE AGENCIES is a 190 years old multinational liner company that operate in Asia Pacific region, with over 130 offices across 17 countries and HQ in Singapore. This sale is for the corporate databases of the company across their operations in SINGAPORE, MALAYSIA, INDONESIA, THAILAND, MYANMAR, VIETNAM, ETC. The data breach involves mainly their operation and corporate data.
Note: This database (17.7 GB) is mainly corporate and trade secret data of the company, with little to no personal data. This data contain sensitive information of the company. Only buy if you intend to obtain the company operational data for corporate espionage

Total Size: 17.7 GB | Total Datasets: 23 | Origin: Hacked by Desorden
Data Type: Corporate Data
Data Industry: Logistics - Marine Liner
Data Geographic: Singapore, Malaysia, Indonesia, Thailand, Myanmar, Vietnam
Data Format: .bak
Payment Methods: Preferred Monero. Bitcoin or USDT +5% Fee

Details of Datasets:
1) AMCI.bak

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CASE STUDY – SITE OVERVIEW (MARKET)

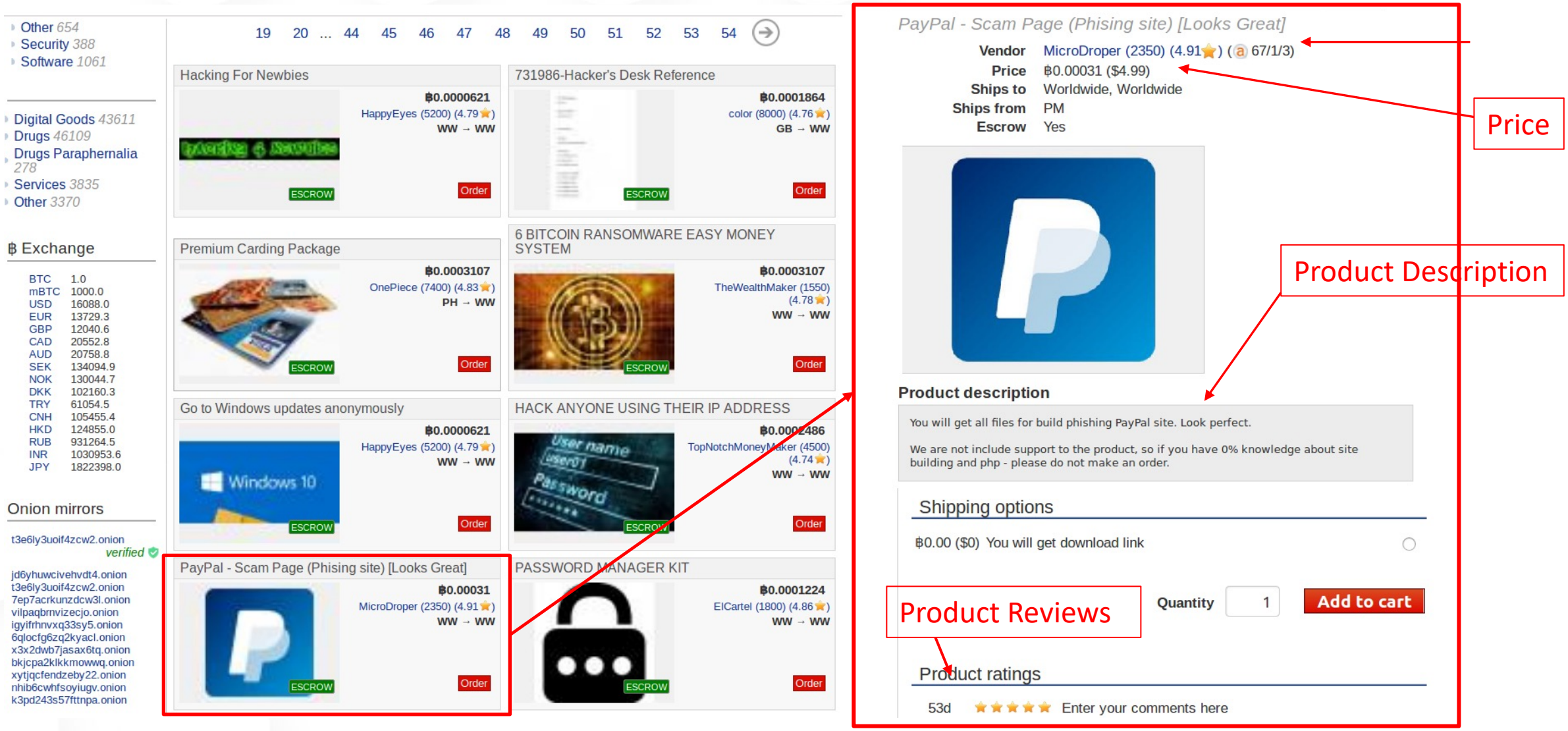

Figure 1. Snapshot of Dream Market and an Example of a Phishing Product for PayPal.

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CASE STUDY – SITE OVERVIEW (CARDING)

Search Functionality

Bank Identification Number

Credit Card Type

Expiration Date

Bank Name

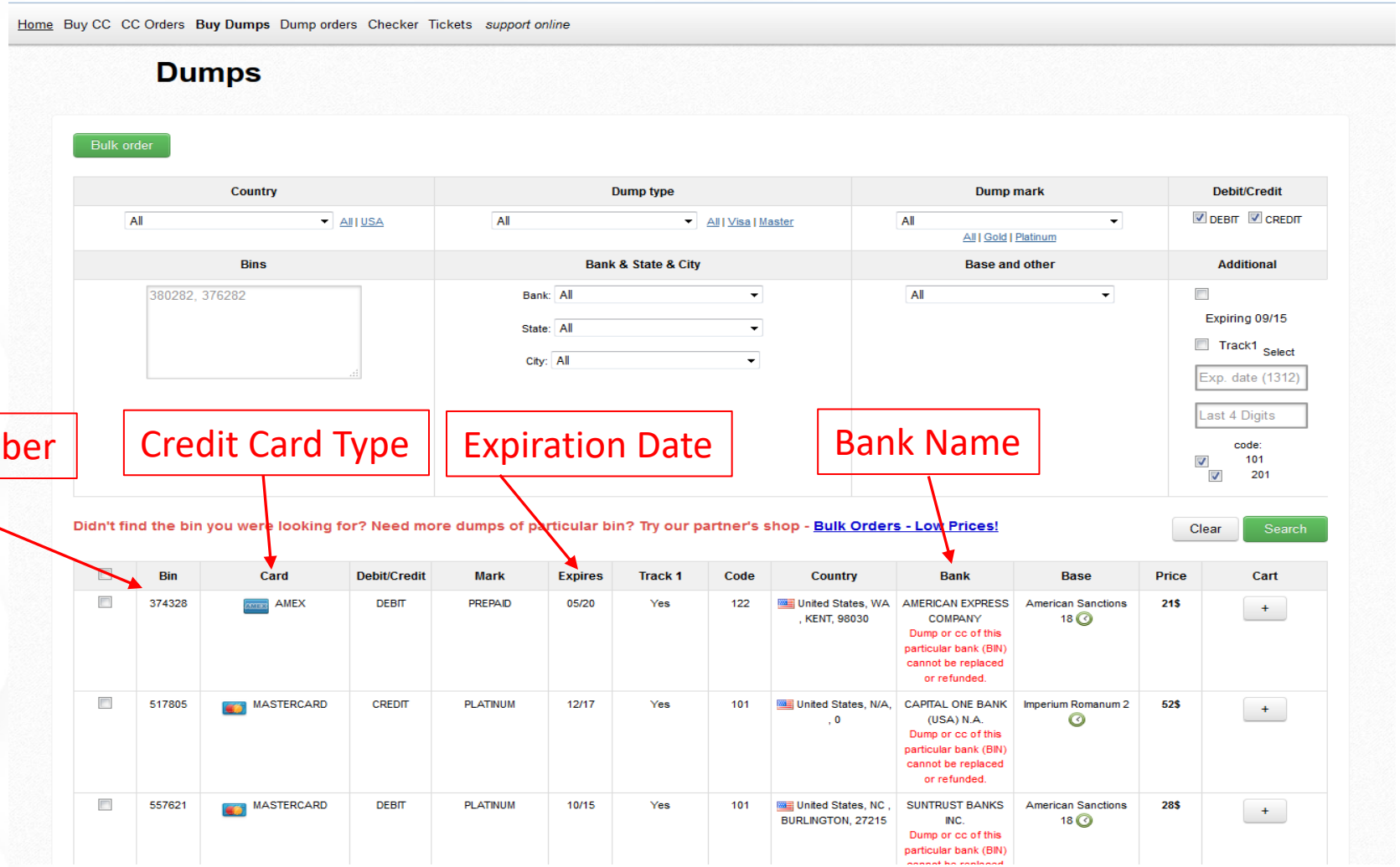

Figure 3. An Example of a Carding Shop Featuring Stolen Credit Cards

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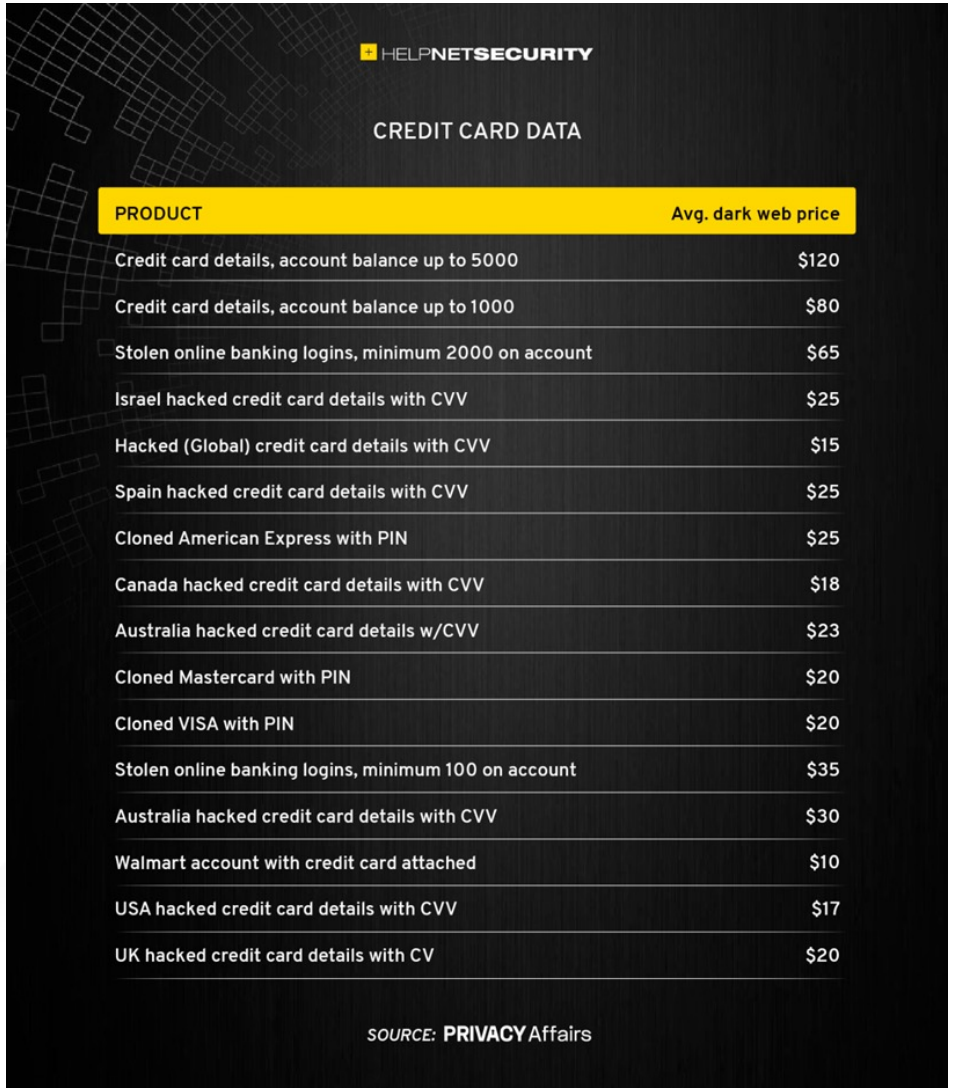
CASE STUDY – CRYPTOCURRENCY

The Dark Web Price Index 2022 – based on data scanning dark web marketplaces, forums, and websites, revealed:

- Credit card details and associated information. Cost between $17-$120
- Online banking login information costs $45
- Hacked Facebook account: $45
- Cloned VISA with PIN: $20
- Stolen PayPal account details, minimum $1000 balances: $20.



HELPNETSECURITY

CREDIT CARD DATA

PRODUCT	Avg. dark web price
Credit card details, account balance up to 5000	$120
Credit card details, account balance up to 1000	$80
Stolen online banking logins, minimum 2000 on account	$65
Israel hacked credit card details with CVV	$25
Hacked (Global) credit card details with CVV	$15
Spain hacked credit card details with CVV	$25
Cloned American Express with PIN	$25
Canada hacked credit card details with CVV	$18
Australia hacked credit card details w/CVV	$23
Cloned Mastercard with PIN	$20
Cloned VISA with PIN	$20
Stolen online banking logins, minimum 100 on account	$35
Australia hacked credit card details with CVV	$30
Walmart account with credit card attached	$10
USA hacked credit card details with CVV	$17
UK hacked credit card details with CV	$20

SOURCE: PRIVACY Affairs

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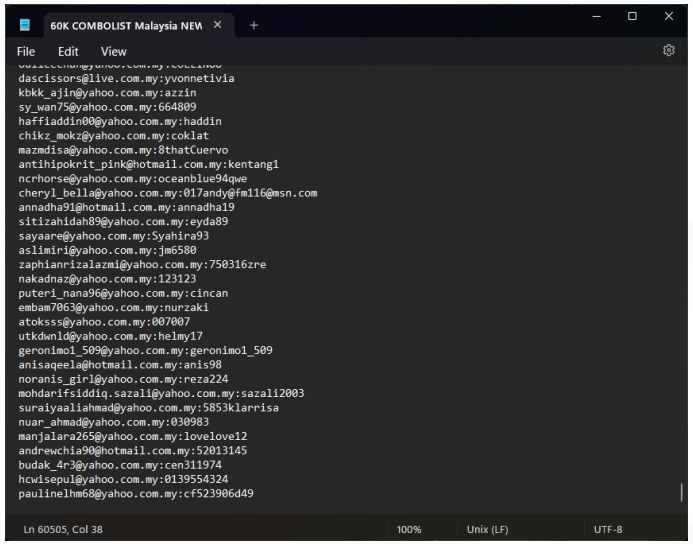
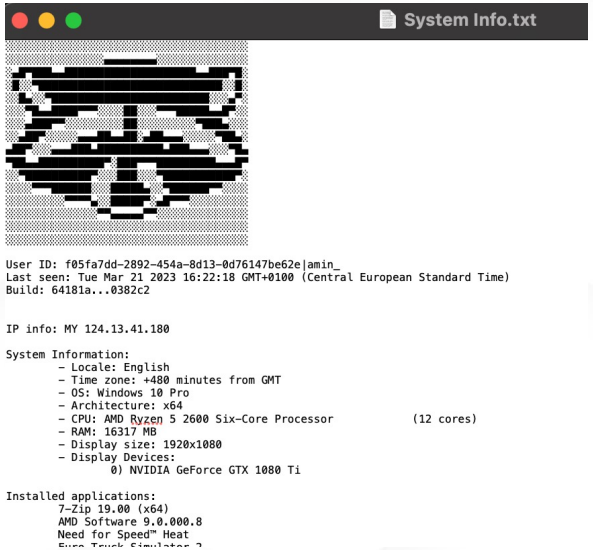
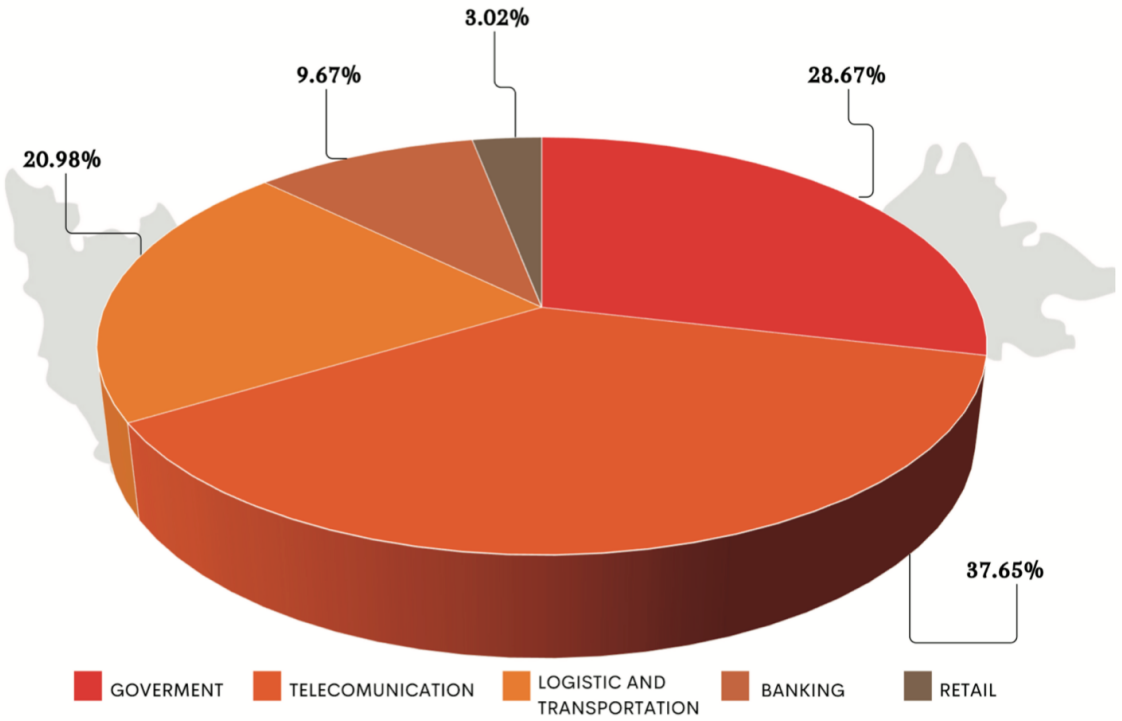
CASE STUDY – SAMPLE DATA







Total data leak in Q1 and Q2

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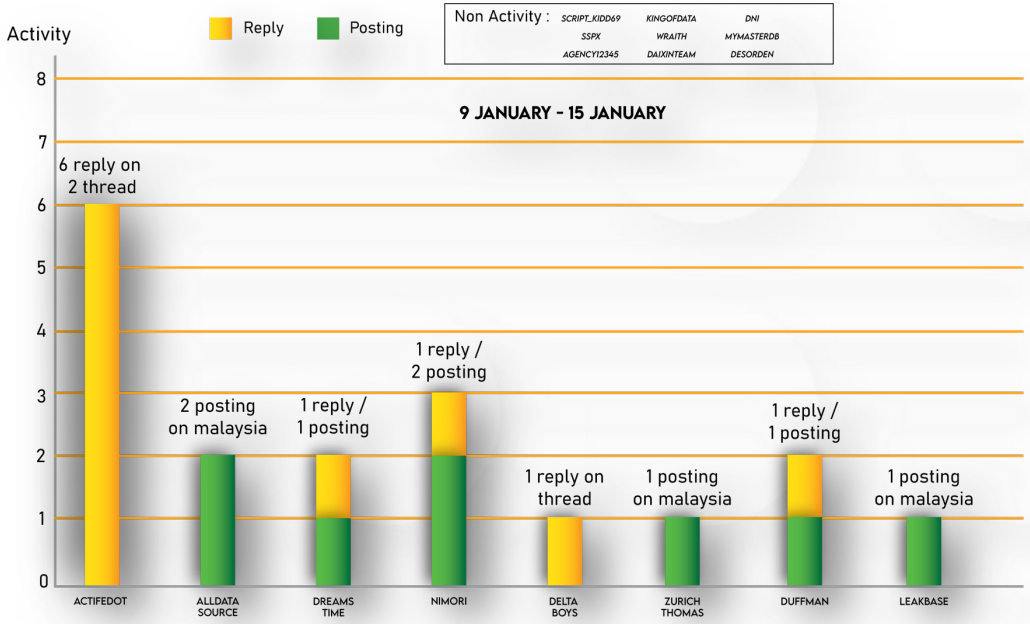
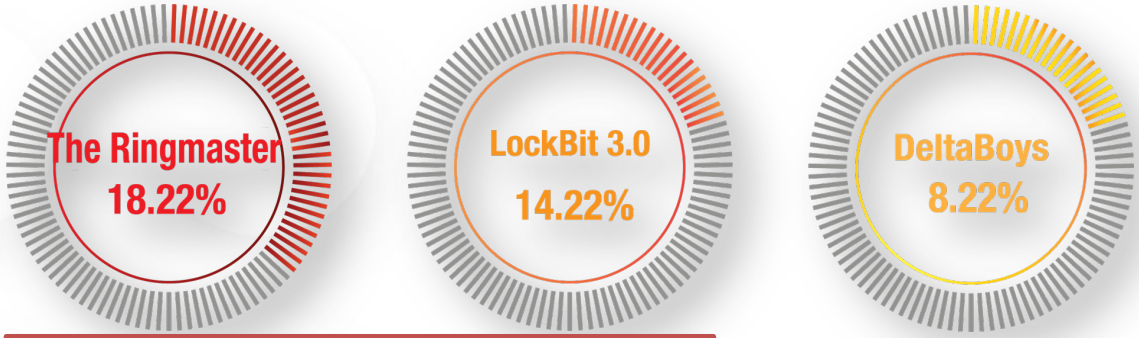
Visualization Finding Threat Actor Monitoring

1. Threat Actor Activity monitored by weekly



2. Total Threat Actor and Incident happened in Malaysia

3. Top 3 Active Threat Actor



4. Timeline Threat Actor Activity by Weekly

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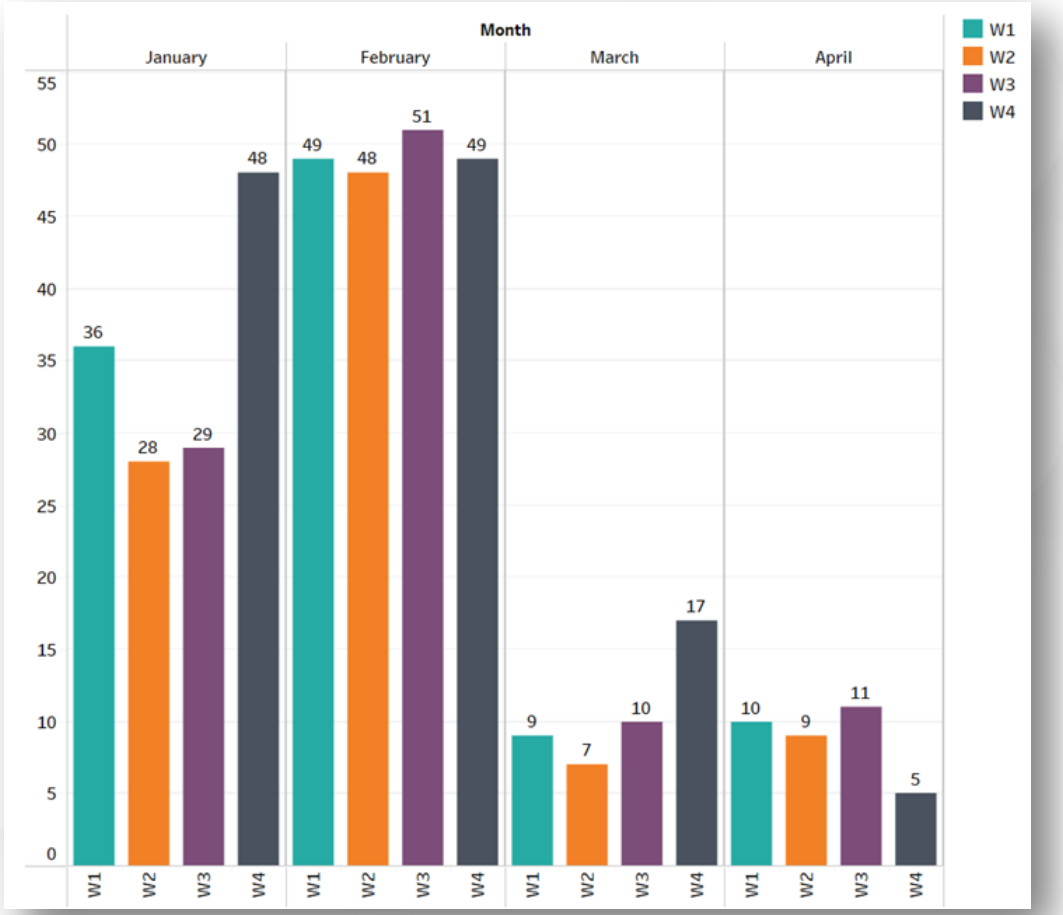
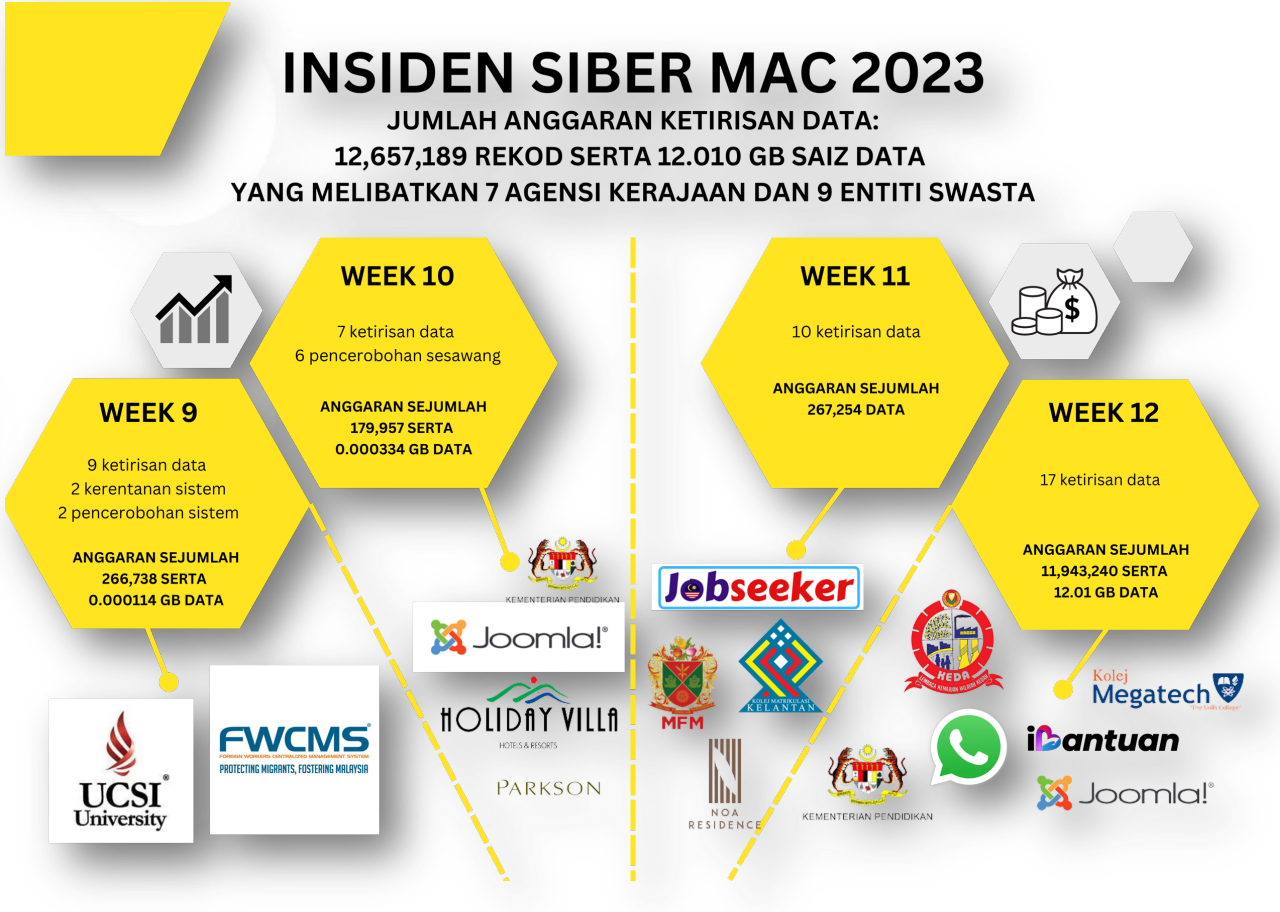
Incident Landscape in Malaysia

1. Graph trend for cyber incident happened in Malaysia.



2. Infographic for summarizing cyber incident monthly.



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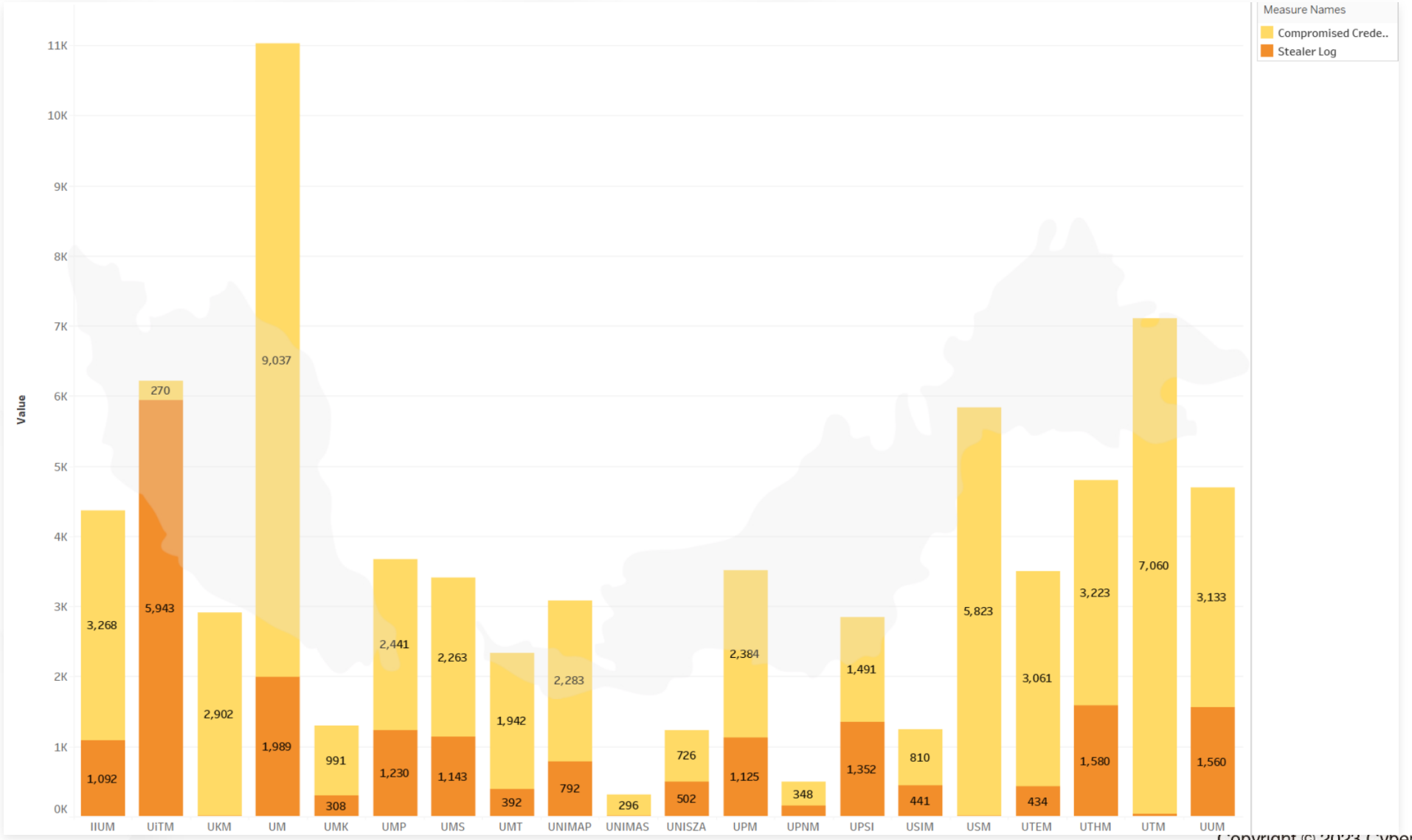

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CASE STUDY – SAMPLE DATA (EDU.MY)

Date	Domain	Email	IP Address	Username	Password	Name	Vin
2023-	[redacted]	.edu.my	a[redacted]	u.my	[redacted]	mad_Mohamed_7	
2023-		.edu.my	s[redacted]	.my			
2023-		.edu.my	m[redacted]	du.my			
2023-		.edu.my	h[redacted]	.my			
2023-		.edu.my	f[redacted]	u.my			
2023-		.edu.my	f[redacted]	u.my	2602		
2023-		.edu.my	s[redacted]	p.edu.my	hna82		
2023-		.edu.my	c[redacted]	du.my			
2023-		.edu.my	n[redacted]	.edu.my			
2023-		.edu.my	r[redacted]	u.my			
2023-		.edu.my	h[redacted]	.edu.my			
2023-		.edu.my	n[redacted]	du.my			
2023-		.edu.my	n[redacted]	du.my	family		
2023-		.edu.my	m[redacted]	du.my			
2023-		.edu.my	f[redacted]	edu.my	5		
2023-		.edu.my	f[redacted]	my			
2023-		.edu.my	k[redacted]	du.my			
2023-		.edu.my	e[redacted]	np.edu.my			
2023-		.edu.my	a[redacted]	u.my			
2023-		.edu.my	fi[redacted]	y			
2023-		.edu.my	a[redacted]	du.my			
2023-		.edu.my	m[redacted]	.my			
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2023-		.edu.my	zi[redacted]	y			
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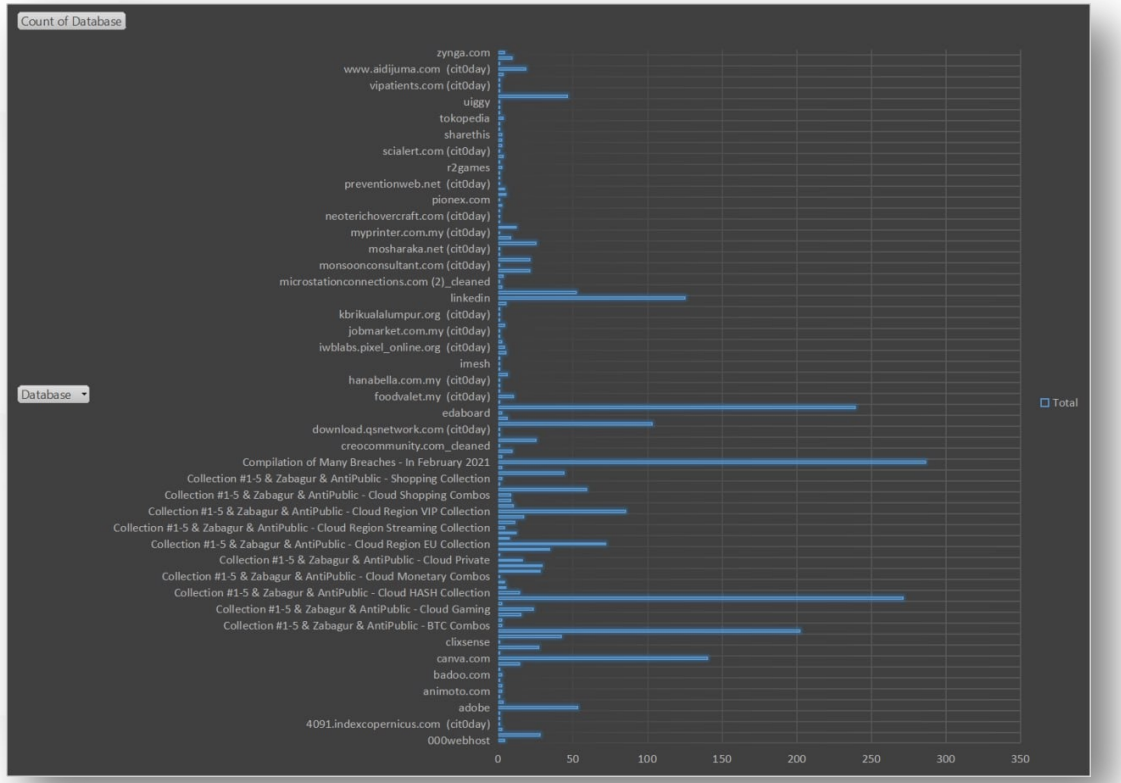
2023-		.edu.my	s[redacted]	du.my			



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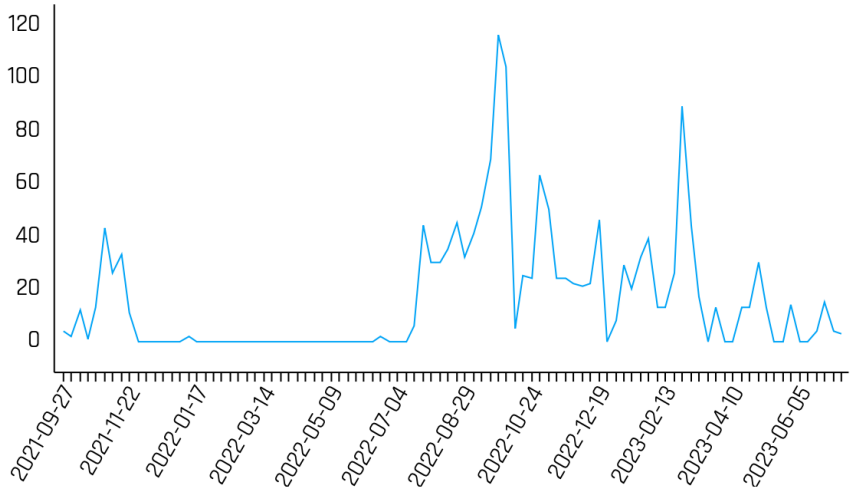
THREAT ACTOR PROFILING



TIMELINE FOR INDICATED TIMEFRAME

forum_breached	77%
forum_sinisterly	12%
forum_raidforum	6%
forum_breach	1%
forum_cracked	1%
forum_nulledbb	1%
forum_nulled	1%
telegram	1%

STATISTIC SITE THREAT ACTOR REGISTERED

Data_leak	22%
Download_link	12%
Bitcoin	11%
Cryptocurrency	11%
Hacking	10%
Email_address	10%
email	10%
Email_domain	6%
Drugs	4%
Fraud	4%

STATISTIC ACTICITIES OF THREAT ACTOR IN THE FORUM

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THREAT ACTOR PROFILING

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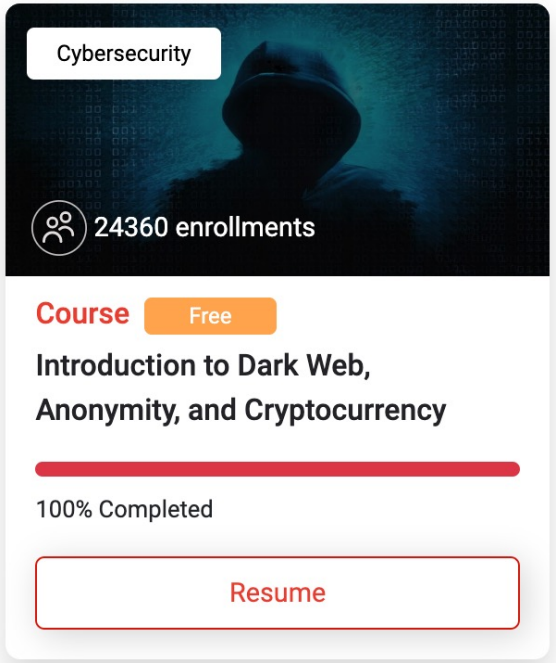
DARKWEB CERTIFICATE

Introduction to Dark Web, Anonymity, and Cryptocurrency



SOURCE: https://codered.eccouncil.org/course/introduction-to-dark-web-anonymity-and-cryptocurrency

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COMMMUNICATIONS AND DIGITAL

CyberSecurity MALAYSIA

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